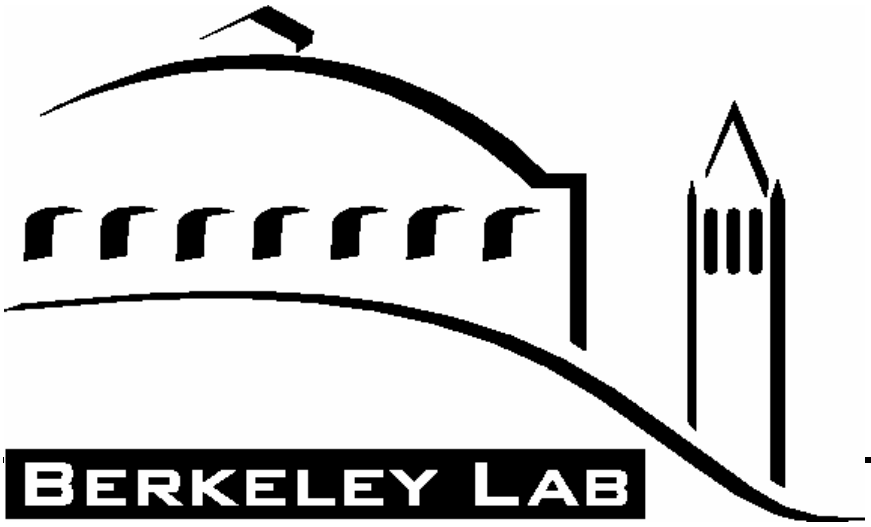

Query Manager

HRIS 8.3

May 2003

Query Manager HRIS 8.3

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Query Manager 8.3

Table of Contents

INTRODUCTION

Welcome to Query Basics for PeopleSoft HRMS 8.3. This class has been developed for LBNL personnel requiring a first time introduction to the PeopleSoft Tool designed to retrieve and order data from the LBNL (Human Resource Information System) HRIS database.

Overview

Introduction and Data Views
This class will first introduce you to PeopleSoft's Query Tool. Query enables users to seamlessly create queries, which can be viewed in a grid control and excel.

Creating and Formatting Queries
You will learn the basic functions of Query and how to create a simple query: selecting a record and specific fields. You will learn how to modify column headings and how to retrieve the short or long description for a translate value, rather than the code.

Defining Criteria
Once you know the basics, you will learn how to retrieve information based on criteria requirements such as equal to, greater than, in list, between, and like.

Understanding Effective Dating
Because PeopleSoft applications use effective dates on tables to add a historical perspective to the data, you will learn how to specify criteria for effective-dated tables.

Multiple Tables & Joins
You will explore how to create a query based on multiple tables, specifically using predefined joins.

Runtime Prompts
You'll be introduced to runtime prompts. Runtime prompts give you the ability to enter specific values for a designated field. These values are then used as criteria for retrieving the information.

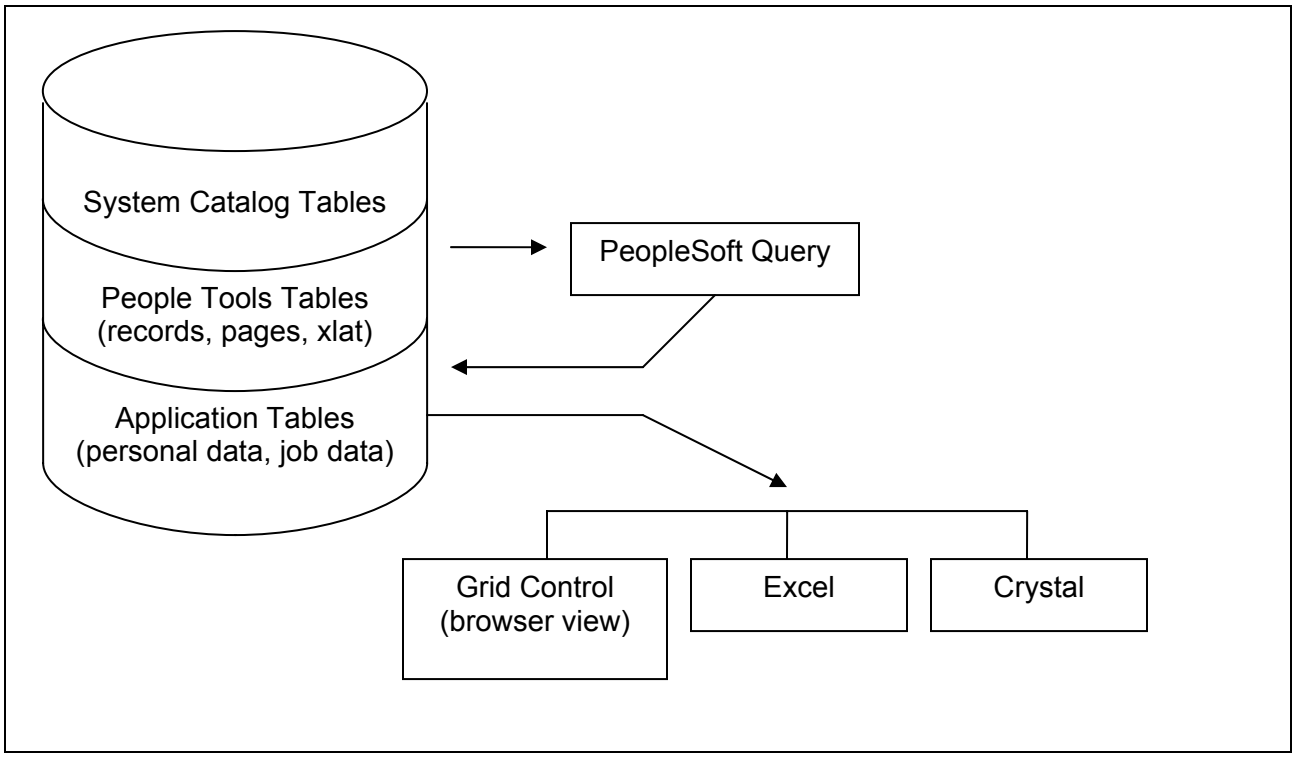
Objectives

- Create queries
- View query results online in a grid control
- Specify criteria for retrieving data
- Retrieve information from effective-dated tables
- Generate runtime prompts
- Access information from multiple tables
- Perform predefined calculations
- Send query results to Excel
- Format your query using formatting features

Uses for Queries

PeopleSoft Query is an end user tool that allows users to easily access the tables which hold the data. To effectively design reports, you need a basic understanding of the structure of the application and the data tables from which you will be producing reports.

PeopleSoft Query automatically outputs to several reporting options:



PeopleSoft query is more than just a reporting tool. You can use it to create queries for a variety of other purposes.

PS/n Vision: You can use queries to pass data and aggregate calculations to PS/n Visions. (This is more for financial users.)

Query Views: The Application Designer has a direct link with PeopleSoft Query to build views for use in your application. The query you define will establish the fields and criteria for your database view.

Workflow queries: There are two types of workflow queries. Database agent queries detect conditions that trigger business events. This type of query can be run periodically by database agents. Role queries determine routing for e-mails, forms, and worklist entries.

Online Analytical Processing (OLAP): Queries are used in OLAP to build hierarchies and extract data to populate OLAP cubes with PeopleSoft information.

More on Query Output

PeopleSoft offers a variety of reporting options:

PS/Query	Online ad hoc reporting tool. Can be used with various report formatters.
Excel	Query Link provides the ability to send queries from Query to a Microsoft Excel spreadsheet. Your data is sent directly from your query into a predefined spreadsheet layout.
Crystal Reports	Versatile report formatter from Seagate Software. Using PeopleSoft's Open Query, Crystal accesses all database platforms supported by PeopleSoft.
PS/nVision	Allows you to import information directly from your query into predefined Excel layouts. Use PS/nVision for data analysis.
SQR	You can copy the Query-generated SQL statements into an SQR report using copy/paste commands. Use SQR for procedural logic and to update database tables.
OLAP	Online Analytical Processing is used to create reports and to analyze data. OLAP can be used to create predefined report templates, for ad hoc analysis, and for what-if scenarios. We will not be using this reporting option.

Description of the primary tables used in this class:

EMPLOYEES
The Employees Table is a PeopleSoft delivered table that provides users a simple summary of most of the primary fields from the primary tables. This table contains only current data for each current employee (also guests and contract workers) and is updated each night; meaning that changes made to employee's data will not be reflected in queries built using the Employees table until the following workday. Berkeley Lab has customized the Employees Table to include LBNL specific fields.

JOB
The Job table contains information about each individual employee job here at LBNL, including his or her job code, compensation rate, employee status, organization code, shift code, leadership code, etc.

EMPLOYMENT
The Employment table contains information about an employee's employment history, including his or her hire date, rehire date, service date, supervisor, mailstop, phone, etc.

ZZ_DEPT_INFO
The ZZ Department Information table is an LBNL custom table, which contains the specific organizational codes and the text description, and is used to make up each employee's organizational code.

PERSONAL_DATA
The Personal Data table contains personal information about each employee and is effective dated. That is, when the data for an employee changes, we keep historical records of when the change happened or what the previous information was. Home address and birthdate are examples of data on the Personal Data table.

Appendix A in the back of this book contains a Relationship-Entity Diagram and specific table field information. It is essential to understand the fundamental relationships between the tables and their data. The Relationship-Entity Diagram shows the technical relationships between tables based on key structure.

SELECTING FIELDS FOR OUTPUT

Overview

You will learn some of the basic concepts and features of Query, including how to create a query from one table, how to modify your view preferences, and how to manipulate data in your query. You will explore the options for displaying the Translate Table fields: long descriptions, short descriptions, and code values.

Objectives

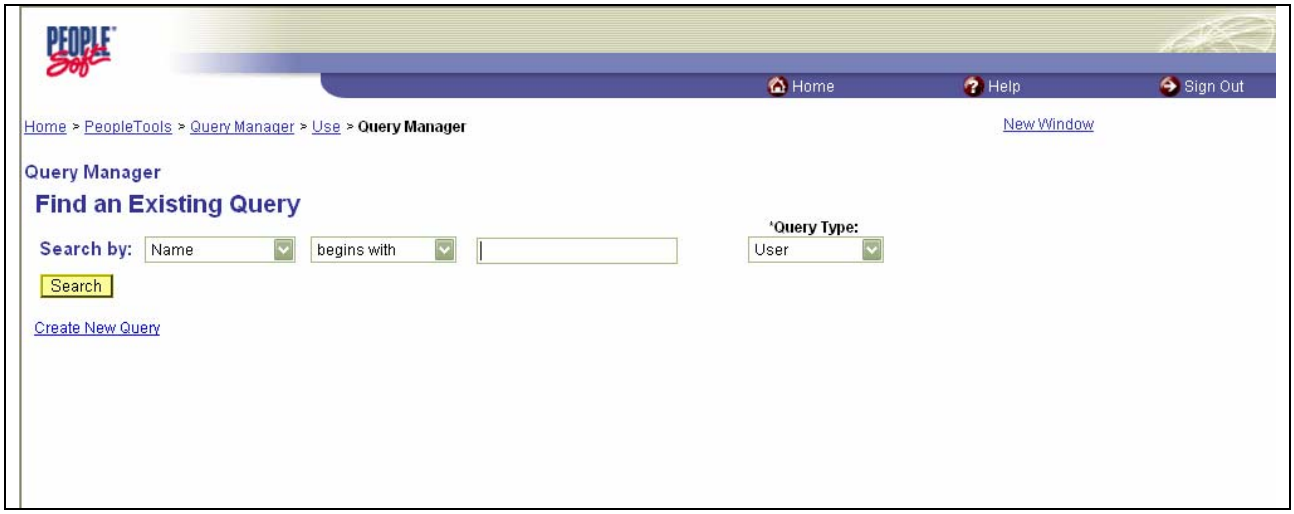
- Run predefined queries from the browser
- Edit field properties
- Create simple queries

Running an Existing Query without 'opening the query'

You can view the results of a query from an Internet Browser.

Click the Internet Explorer icon on the desktop.

1. Logon: *your userid*
2. Password: *your password*
3. Navigate using the breadcrumbs.



The Query Manager Search page allows users to perform one of two functions:

- Search for existing queries
- Create a new query

There are advanced search options available in the Query Manager Search page to narrow the search.

Search In

Name	The text entered in the Search For text box must be in the name of the query to be displayed in the search results.
Description	The text entered in the Search For text box must be in the description of the query to be displayed in the search results.

Search Type

Begins With	The text entered in the Search For text box must be in the beginning text of the Search In criteria to be displayed in the search results.
Contains	The text entered in the Search For text box must be in the string of text of the Search In criteria to be displayed in the search results.

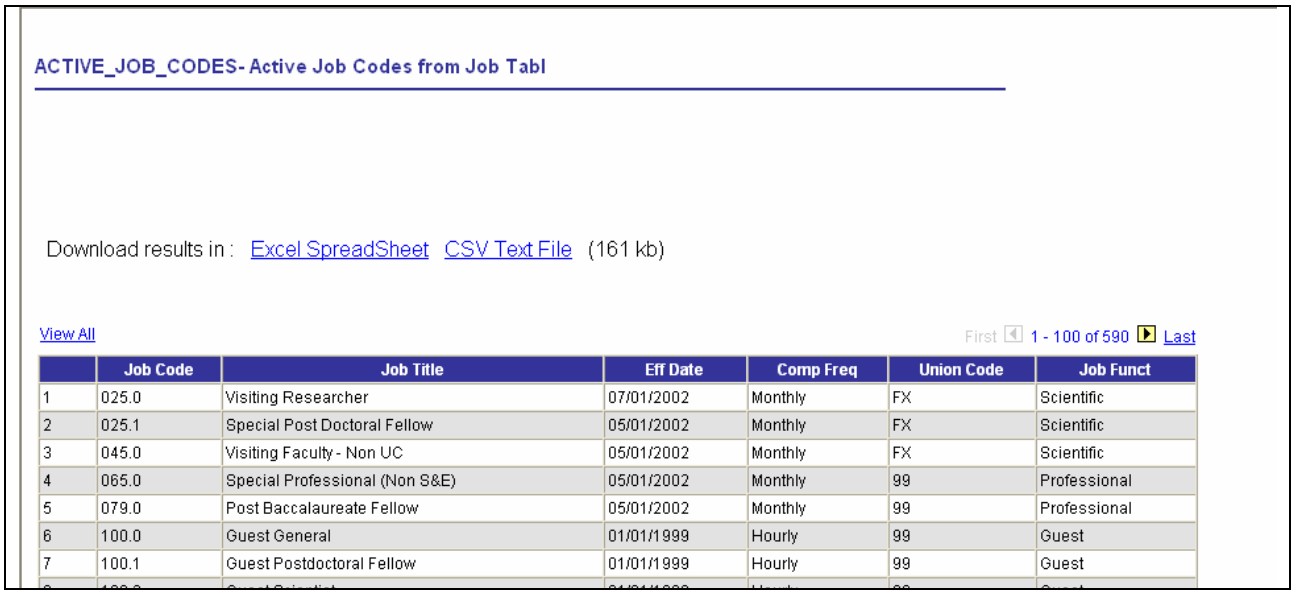
1. Leave the Search criteria in the default of Name and Begins with
2. Type “ACTIVE” or simply “ACT” in the empty search field.
3. Click Search (you can tab to the Search button and press Enter when it is highlighted)

Available queries are displayed. The following information is displayed for each query:

Query Name	The database name of the query. The Query name is a hyperlink used to access Query Manager Edit mode.
Query Description	The description of the query entered upon creation.
Query Type	Private: Only the logged on UserID can modify or delete this query. Public: Any user with access can run this query. (For modifications or questions regarding Public Queries, send email to hris@lbl.gov)
Delete	A page will appear asking the user if it is OK to delete the query.
Rename	A page will appear allowing the user to modify the query name.
Run	The query will be executed and the results will display in a new browser window.

Run the ACTIVE_JOB_CODES query.

4. Locate ACTIVE_JOB_CODES
5. Click Run



ACTIVE_JOB_CODES- Active Job Codes from Job Tabl

Download results in : Excel SpreadSheet CSV Text File (161 kb)

View All First 1 - 100 of 590 Last

	Job Code	Job Title	Eff Date	Comp Freq	Union Code	Job Funct
1	025.0	Visiting Researcher	07/01/2002	Monthly	FX	Scientific
2	025.1	Special Post Doctoral Fellow	05/01/2002	Monthly	FX	Scientific
3	045.0	Visiting Faculty - Non UC	05/01/2002	Monthly	FX	Scientific
4	065.0	Special Professional (Non S&E)	05/01/2002	Monthly	99	Professional
5	079.0	Post Baccalaureate Fellow	05/01/2002	Monthly	99	Professional
6	100.0	Guest General	01/01/1999	Hourly	99	Guest
7	100.1	Guest Postdoctoral Fellow	01/01/1999	Hourly	99	Guest

The search results are displayed in a new browser window. This is called the grid control. The default display will always be 100 rows. You can select the View All hyperlink to view all records or select the Excel SpreadSheet or CSV Text File hyperlink to download the results to Excel. (We will go over the download results to excel option later.) You can simply close the results window to return to your query.

Note: From the online display, you can print your results using the browser's print icon.

Creating a New Query

There are six steps to creating a basic query:

1. Select the record(s)
2. Select the field(s)
3. Set the query preferences
4. Edit the field properties
5. Save the query
6. Execute the query

Create a basic query reporting general information about employees.

Record Selection

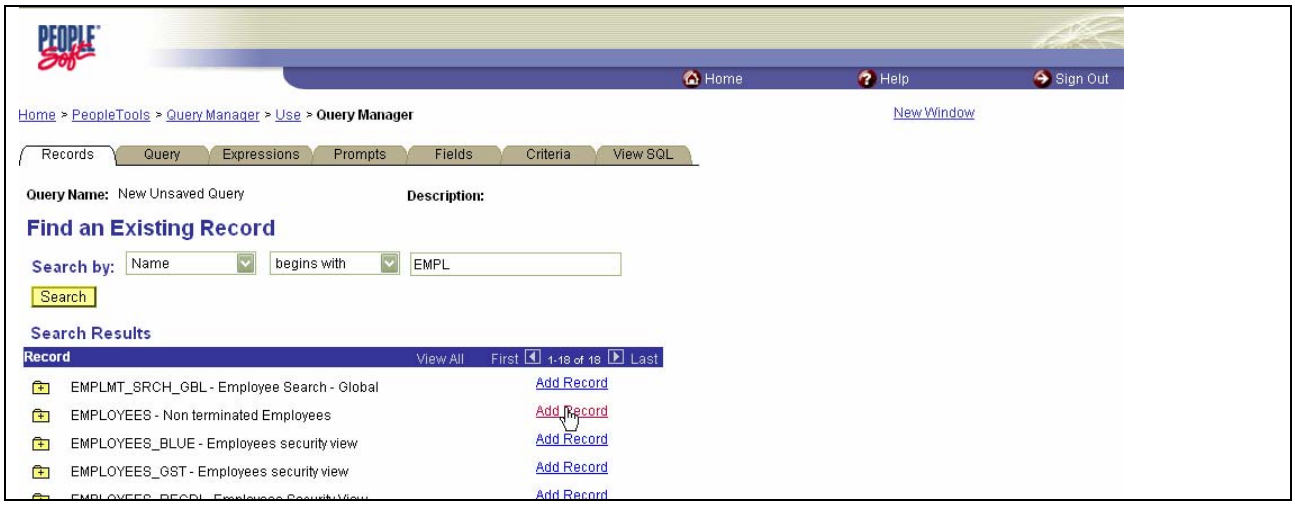
1. Click Create New Query

The first step in creating a query is selecting a record. The record you select establishes the primary focus of your query. Notice that the page now displays various tabs defaulting to the *Records* tab.

The search options for records are the same as the options for selecting queries from the Search page.

We know that we want to use the EMPLOYEES record for our query.

2. Type “EMPL” in the Search Field.
3. Click Search.



Available records are displayed. The following information is displayed for each record:

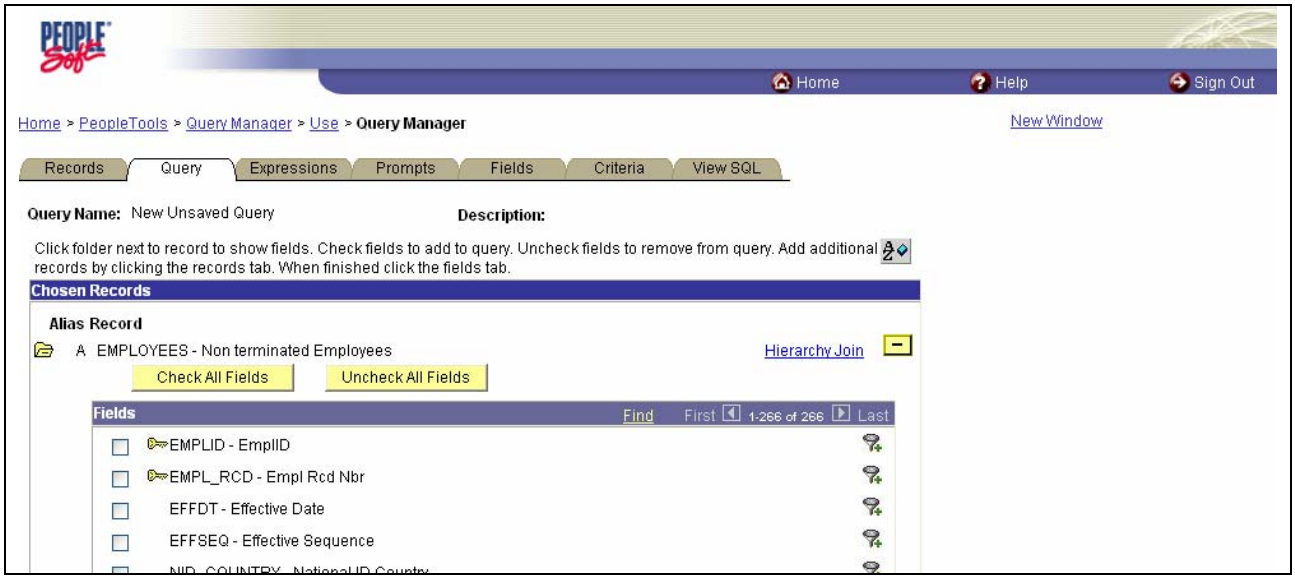
Folder Icon	Click on the icon to display all the fields associated with the record. This is useful to determine if the record is the correct one required for the query.
Record Name – Description	The database record name – the record description entered by the developer at the time the record was created.
Add Record	Click this hyperlink to select the record for this query.

4. Locate EMPLOYEES
5. Click Add Record.

Note: EMPLOYEES is an effective dated table, the effective dated window appears. To accept the default effective dated options, click OK.

Field Selection

Once a record is selected, the *Query* tab will be the active page listing the fields associated with the selected record.



Chosen Records

Folder icon	Hide or Unhide the list of fields associated with the selected records. This is useful when you are using more than one record for the query and only need to view the fields associated with one record at a time.
Alias	This is the default that is given at the time a record is selected and is required when generating the SQL for the query.
Record	The record name in the database and the description of the record.
Hierarchy Join	The hyperlink allows you to join a child record to its parent.
Minus Button	Used to delete a hierarchy join.

Choose fields

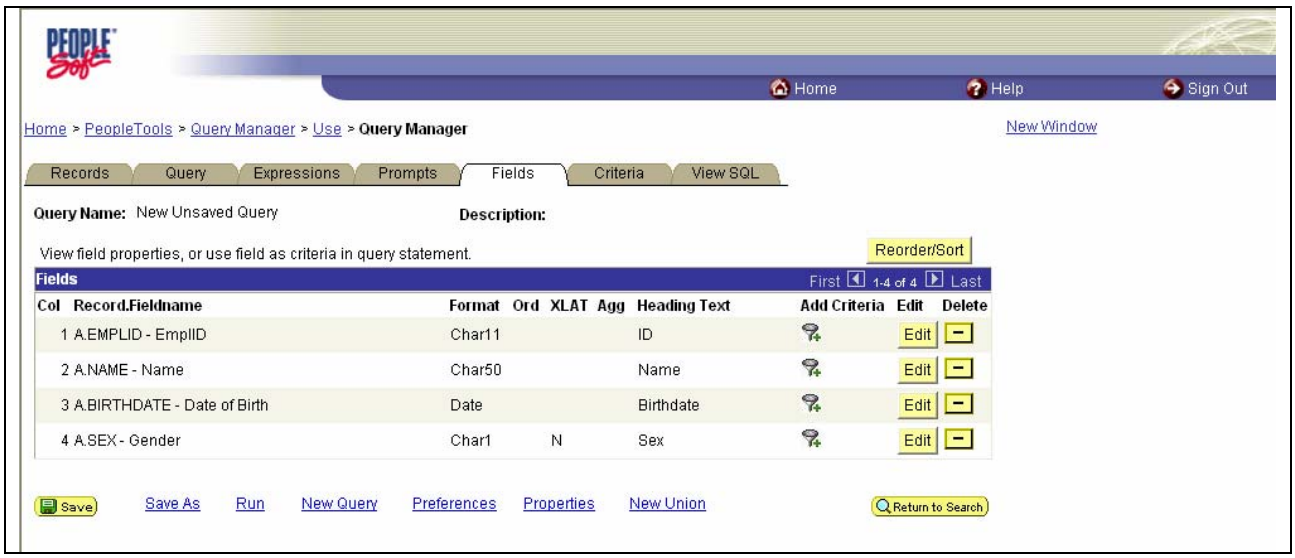
The page will automatically display all fields related to each record. You can use the scrollbar to find the field(s) required for the query, or use the navigational options in the *Field*s header.

Checkbox	Check the box to select this field for the query.
Key Symbol	Indicates the key fields for the record.
Field	The field name as it is stored in the database.
Add Criteria button	Used to add a row of Criteria to the query. (We will discuss criteria later.)
Join Records Name	Some fields are related to other records. Those related records can be joined to this query using this hyperlink.

Note: Your fields can be alpha-sorted by clicking the  button. You may also use the Find (Ctrl+F) from the Edit menu in your browser window to find a specific field. In addition, there is a Find hyperlink found on the blue bar at the top of the list of fields. This is a PeopleSoft delivered link that will search the fields. However, this method is not as quick as Ctrl+F.

6. Select the checkbox for the following fields:
   - EMPLID
   - NAME
   - SEX
   - BIRTHDATE

7. Click the Fields tab.



You will see your selected fields listed here on the Fields tab.

Col	Column. This is the order in which the fields will be displayed in the query results.
Field	The field name as it is stored in the database.
Format	This is the format of the field as it is defined in the database.
Ord	Indicates if this field has been selected to be used for sorting.
XLAT	This indicates if the field is a code from the translate table.
Agg	This indicates if an aggregate function has been assigned to this field.
Heading Text	The default text as defined in the database.
Add Criteria button	 Used to add a row of Criteria to the query using this field.
Edit Button	Select this button to edit the field properties.
Minus Button	Select this button to delete the field from the query.

Once you have created a query, you will need to save it prior to executing it.

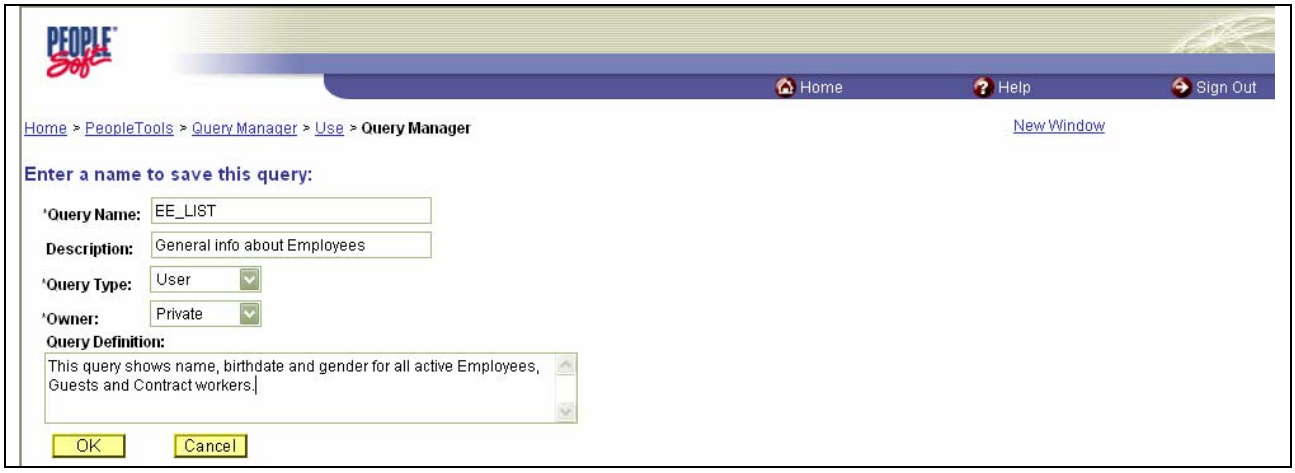
8. Click Save

Note: You may only save a query as private. If you need to have a Private query rebuilt as a Public query, please send email to hris@lbl.gov.

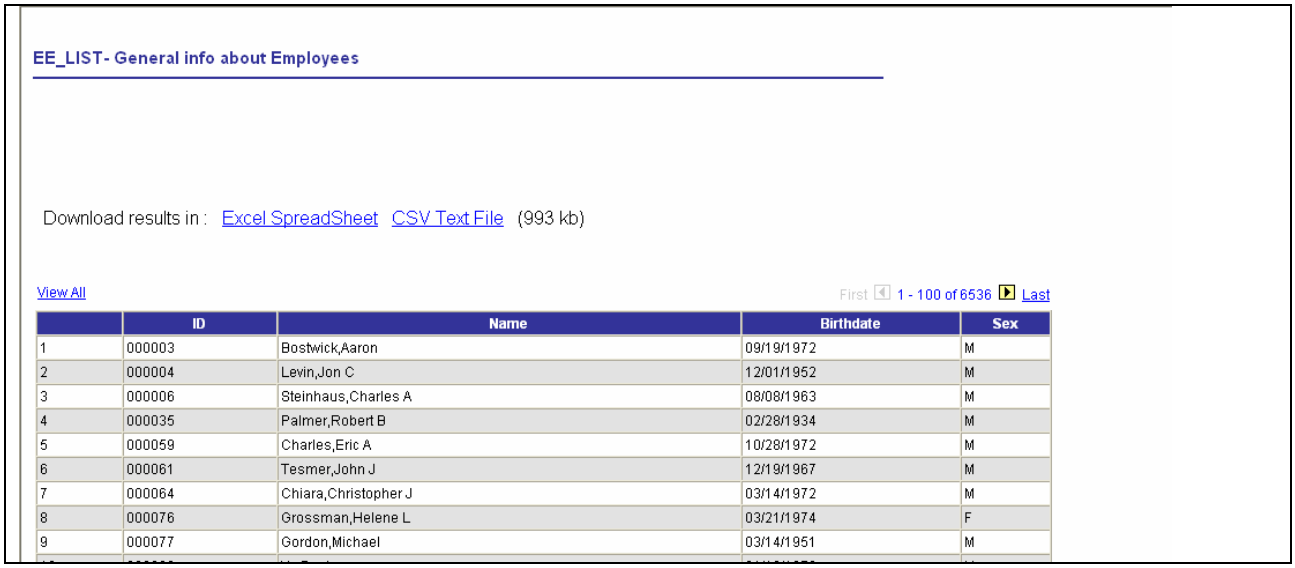
Query Name	Defaults to “New Query”. Query names are upper case and can be up to 30 characters. You cannot have any spaces or any special characters (other than an underscore).
Description	You can add a description for your query that can be up to 30 characters, mixed case, with special characters.
Query Type	Defaults to User. Do not edit.
Owner	Indicates who has access to the query.
Private	This is the default. Only the Operator ID that created the query can open, run, modify, or delete the query.
Public	Any user with access to all records used for the query can open and execute the query. The user may also save the Public query as a Private and make changes to it.
Query Definition	You can enter a more detailed description or definition for your query here. You may want to include the reason for creating the query.

9. Save this query about general employee information.

- Query Name: EE_LIST
- Description: General Info about Employees
- Owner: Private



10. Execute the query by clicking on the Run link to see how many active employees, (and guests and contract workers) we have in our database.

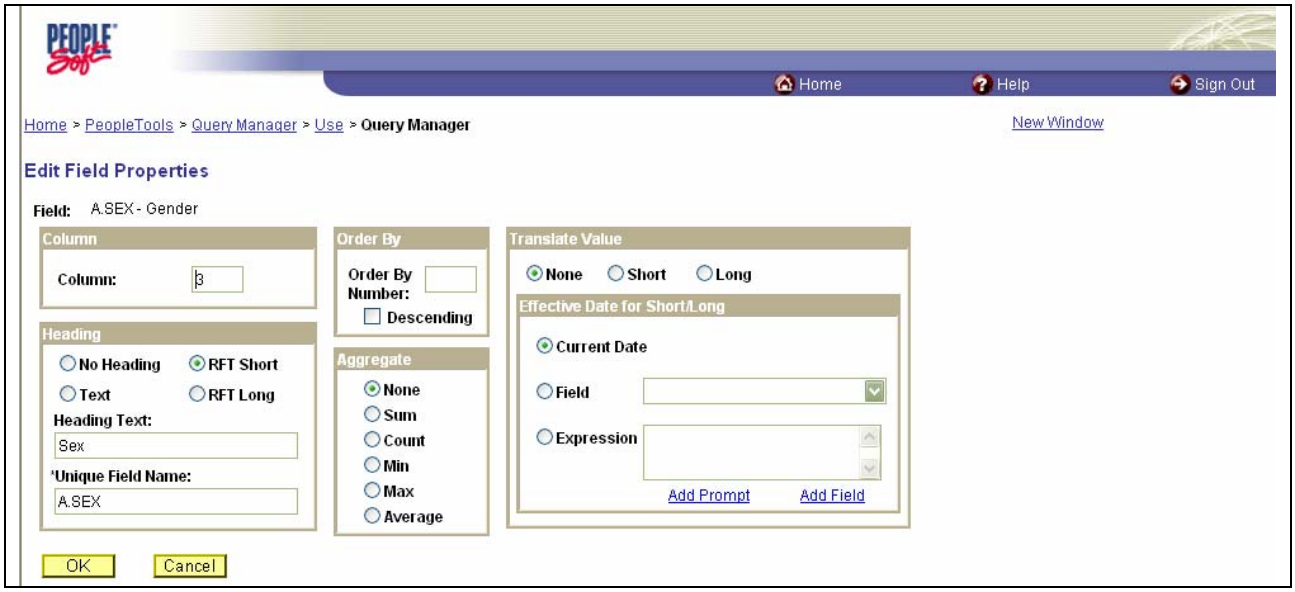


	ID	Name	Birthdate	Sex
1	000003	Bostwick,Aaron	09/19/1972	M
2	000004	Levin,Jon C	12/01/1952	M
3	000006	Steinhaus,Charles A	08/08/1963	M
4	000035	Palmer,Robert B	02/28/1934	M
5	000059	Charles,Eric A	10/28/1972	M
6	000061	Tesmer,John J	12/19/1967	M
7	000064	Chiara,Christopher J	03/14/1972	M
8	000076	Grossman,Helene L	03/21/1974	F
9	000077	Gordon,Michael	03/14/1951	M

Edit Field Properties

Once fields have been selected for the query, you have the option of editing the field properties to enhance the displayed results of the query.

11. Locate the SEX field
12. Click Edit



Note: The column number is the order in which the fields (columns) will display in the query. This is not the order in which the query will be sorted.

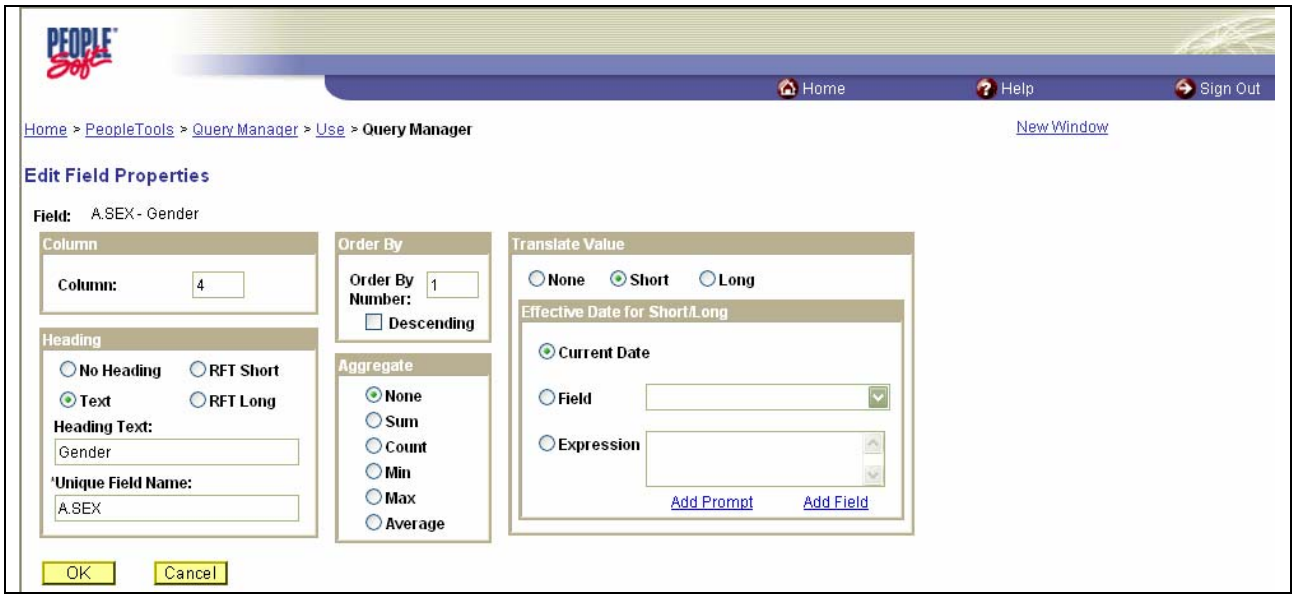
Column	The query results will be displayed in the order of the fields (columns) selected for the query,
Order By Number	Enter a number to indicate that the query should be sorted by the data in this field. The number one represents the highest order of sort. The default is always ascending.
Descending	Use this checkbox to indicate that you want this sort in descending order. The default is always ascending.
Text	Use this checkbox to indicate that you want to type a custom heading in the Heading Text field.
No Heading Text	Indicates that the data is to display with no column heading.
RFT Short	The Records Field Text (RFT) short description as it was defined in the database,
RFT Long	The Records Field Text (RFT) long description as it was defined in the database,
Heading Text	Previews the text as it will be displayed in the query results.
Unique Field Name	Used for translations. Defaults. Do not edit.
Aggregate	An aggregate is a predefined calculation in Query. An aggregate function returns a single value for multiple rows if output. (We will discuss this more later.)
Translate Value	Translate values are values stored in a PeopleSoft Application Table called Xlattable (pronounced translate table).

None	Will display the translate code and assumes the Current Date logic.
Short	10-character short translate name defined in the database, User specifies the effective-date logic.
Long	30-character short translate name defined in the database, User specifies the effective-date logic.

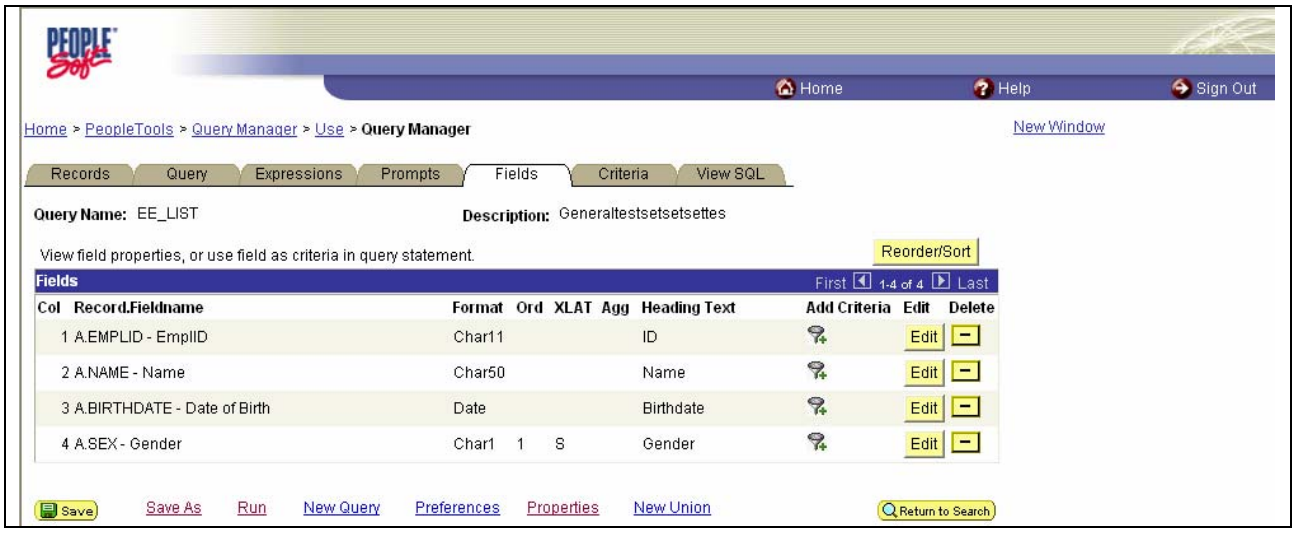
Note: If a field has an associated translate value, the column XLAT will contain one of three values: N, S, or L and the Edit Field Properties page will include an area for the Translate Value information to be selected.

13. Edit the field properties for the SEX field.

- Column Number: 4
- Order By: 1
- Heading Type: Text
- Heading Text: Gender
- Aggregate: None
- Translate Value: Short



14. Click OK



Notice that the *SEX* field has moved below the *BIRTHDATE* field. It is designated as the primary sort, will display the short translate value rather than the code, and will display the column heading as “Gender”.

15. To further improve the display of the query results, edit a few more field properties.

- Field: Name
- Select Edit
- Heading: Text
- Heading Text: Employee Name
- Order By: 2
- Click OK

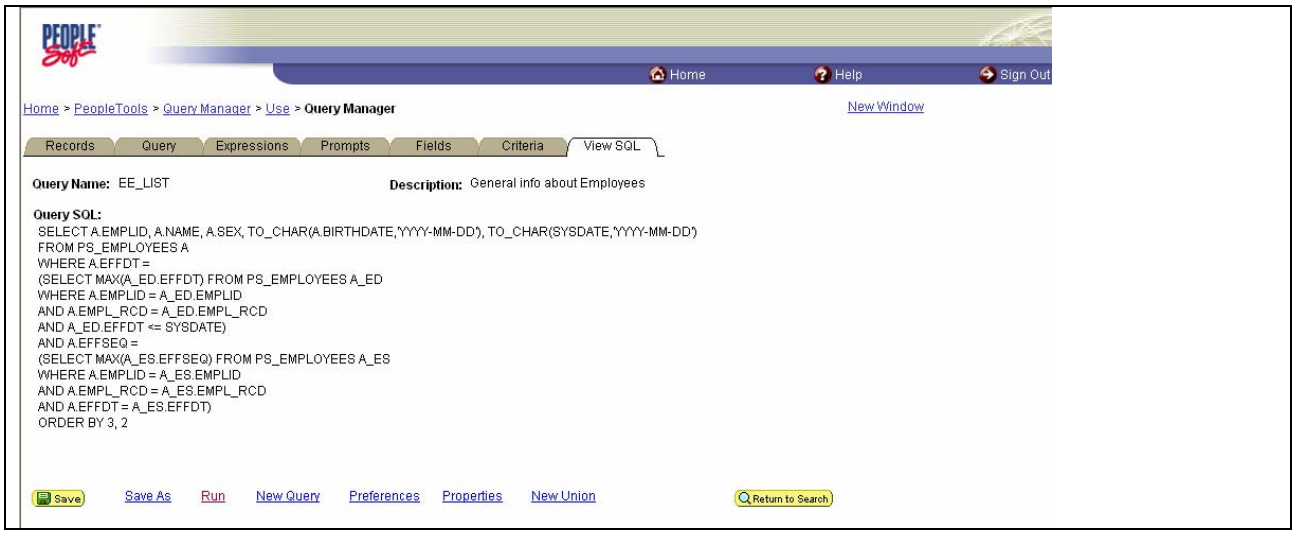
Any time you make even the slightest change to your query, you will need to save it again prior to executing it.

16. Click Save

Viewing SQL Statements

While you are creating your query, the query tool is automatically generating the SQL (Structured Query Language) for you. Understanding SQL statements will assist you when you need to troubleshoot a query error. By viewing the SQL statement query generates, you can anticipate any errors before they occur.

17. Click the SQL tab



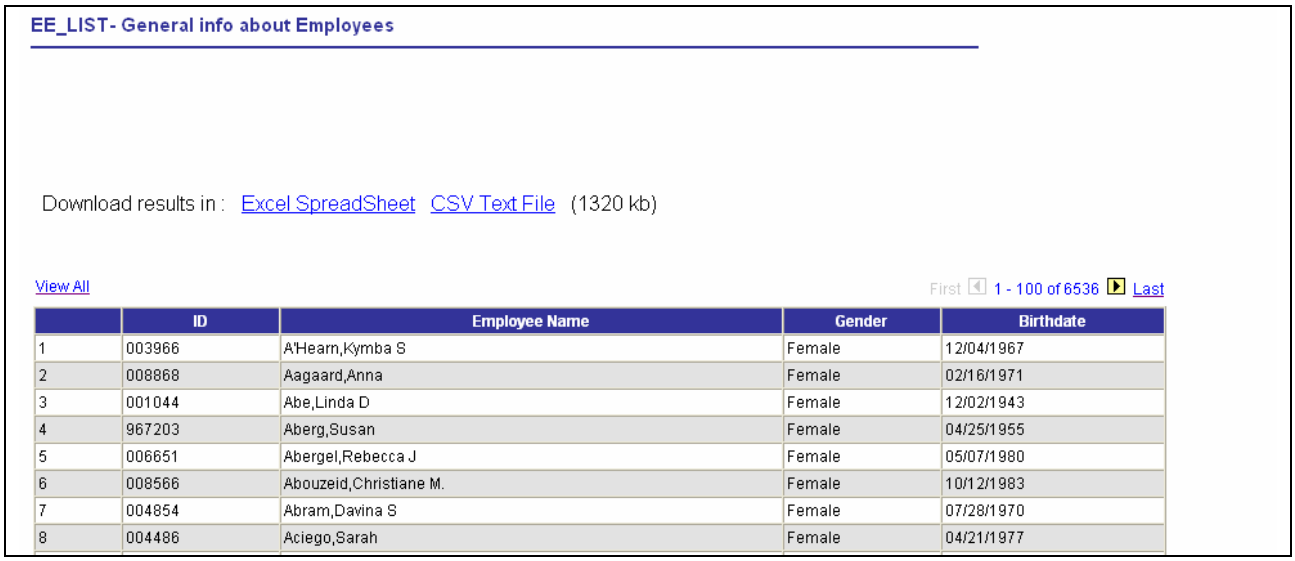
Note: You have the ability to highlight the SQL and use standard Windows keyboard shortcuts (CTRL+C) to copy the statement into your Windows clipboard. From your clipboard, you can past the statement into an SQL script file or another application.

In order to edit the Query Description or Definition you can go to the Properties page by selecting the Properties hyperlink. You can also choose to eliminate duplicate rows from your query by selecting the Distinct check box.

Note: The Query Name, Description, and Owner defaulted from the Save page.

Query Type	Ad-hoc queries via the Query Manager will also default to a query type of User.
Distinct	Select this checkbox to eliminate duplicate rows within the query results.
Query Definition	Free text box that can be used to further define the query.
Status Box	Displays the history of the last save of the query.

18. Execute the query again but with our field edits by clicking Run.



	ID	Employee Name	Gender	Birthdate
1	003966	A'Hearn,Kymba S	Female	12/04/1967
2	008868	Aagaard,Anna	Female	02/16/1971
3	001044	Abe,Linda D	Female	12/02/1943
4	967203	Aberg,Susan	Female	04/25/1955
5	006651	Abergel,Rebecca J	Female	05/07/1980
6	008566	Abouzeid,Christiane M.	Female	10/12/1983
7	004854	Abram,Davina S	Female	07/28/1970
8	004486	Aciego,Sarah	Female	04/21/1977

Chapter Key Points

1. There are six steps to know in creating a query

   - Select the Record(s)
   - Select the Field(s)
   - Set the Query Preferences
   - Edit the Field Properties
   - Save the Query
   - Execute the Query

2. For the translate fields, the long or short descriptions can be displayed rather than the code.

3. Queries can be saved as Private or Public. If a query is Public, all users who have query security access to the records referenced by the query can execute the query.

4. The SQL statement generated by query is viewable by selecting the SQL tab.

5. Duplicate rows of data can be eliminated from the output with the Distinct option.

ACTIVITY 1

The Laboratory Employees Labor Relations Office (LER) has asked you to generate two queries for them. The queries require you to access information from the EMPLOYEES table.

1. The first query must list all union codes currently being used at the laboratory. The other requirements are:

   - Display the fields: UNION_CODE
   - The column heading should be: Active LBNL Union Codes
   - *Remove duplicate rows of data.
   - Save the query as UNIONCODES.

*Hint: Use the Distinct option.

2. Click Run to view your results.

ACTIVITY 2

1. The second query must list all employees and their union code. The other requirements are:

*Hint: You can do a Save As to modify the existing UNIONCODES query.

   - Display the fields: EMPLID, NAME, UNION_CD, and JOBCODE
   - Column order the output by EMPLID, Employee Name, Union, and Job Code
   - Sort the query results by name.
   - Save the query as UNIONCODES2.

2. Click Run to view your results.

SELECTING ROWS FOR OUTPUT

Overview

You will learn how to add criteria to a query to return specific rows of data. These criteria rows will allow you to compare fields to find data of equal values, values greater or less than a field, and much more.

Objectives

- Describe each option on the Criteria tab
- Describe each method of creating criteria.
- Define criteria for effective-dated tables.

Criteria Tab

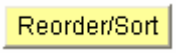
Often you do not want to retrieve every row of data from the records you are accessing. By defining criteria rows, you can selectively retrieve the required information. A query will only return the rows of information that meet ALL the defined criteria. If criteria are not met by a row then that row will be ignored.

IMPORTANT: The Query Manager retrieves and delivers labwide data for all records in the database. You must create criteria defining the desired results or you will retrieve the entire contents of the HRIS system.

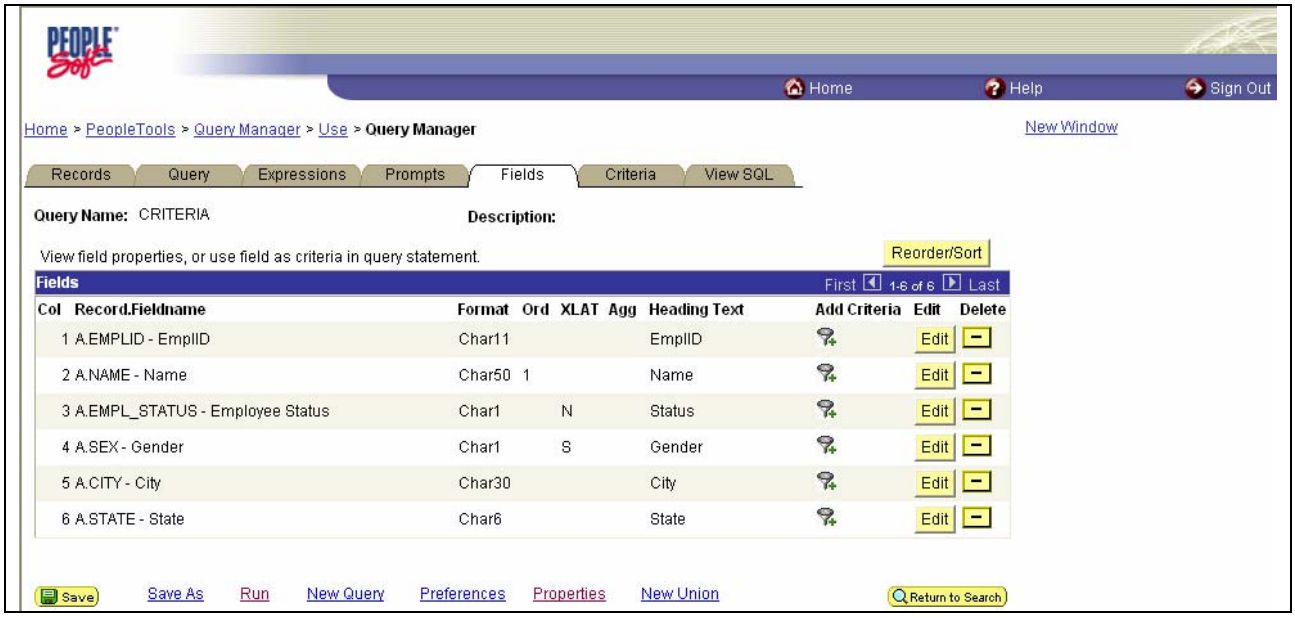
Very Important Criteria:
DEPTID – to see only specific divisions or departments. Use *Equal To* or *In List*.
EMPL_STATUS – to see only active employees. Use In List. (Active status codes are A, L, P, S)
EMPL_CLASS – to specify LBNL employee, Guest or Contract workers. Use *In List*.

1. Create a basic query to capture employee data.

   - Record: EMPLOYEES (table is already a view of only non-terminated employees)
   - Fields: EMPLID, NAME, EMPL_STATUS (short description), SEX (short description, heading RTF long), CITY, STATE (heading RTF long)
   - Sort by: NAME
   - Use the column order shown on the next page
   - Query Name: CRITERIA

Note: You may use the 

button shown on the fields tab in order to indicate the sort order and column order edits for all of the fields at one time.



2. Run Query and notice how many rows of data are returned. (Query must be saved before it can be run.) In order to be more selective about the results of the query, you can add criteria.

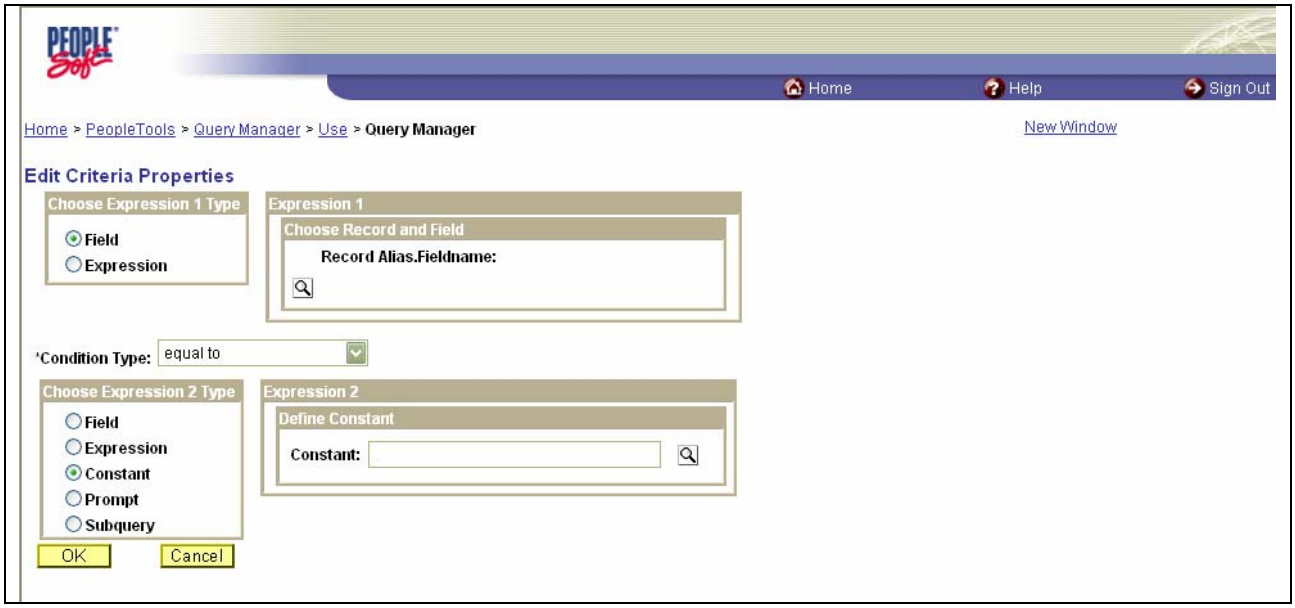
Criteria can be added to a query from various locations:

- From the Query Page using the  next to the field you would like to add criteria to.

  Note: This does not necessarily have to be a field you have selected to view in your query results.
- From the Fields Page using the  next to the field you would like to add criteria to.
- From the Criteria Tab.

When you know what field you want to apply the criteria to, the first two methods are useful as it will populate some properties within the Criteria tab. To add criteria the long way:

3. Click the Criteria tab
4. Click Add Criteria button

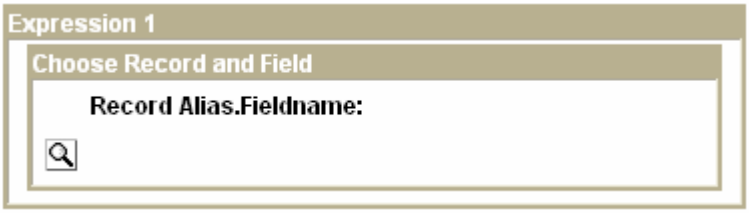


Expression 1 Type
Used to specify what you are comparing.

Field	You are comparing to a field within the records selected for this query.
Expression	You are comparing to an expression you create. Query will evaluate each row with the expression created.

5. Choose Expression 1 Type "Field"

Expression 1
This is where you select the field or expression you want to compare.

Field	If field was selected as the type: 
Expression	If expression was selected as the type: 

6. In the Choose Record and Field dialog box, select the magnifying glass to get a list of all possible fields. Select SEX.

Note: There is an "A." to indicate that this field is coming from the "A" table – in this case the first table that was selected.

Condition Types

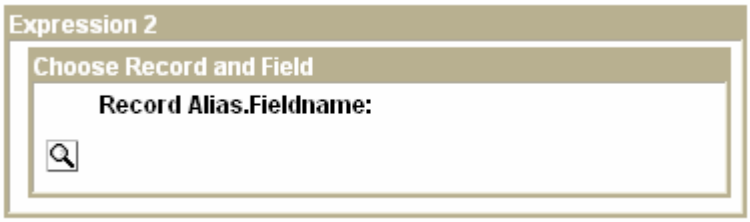
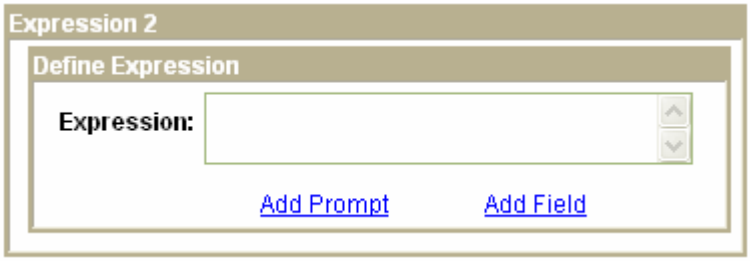
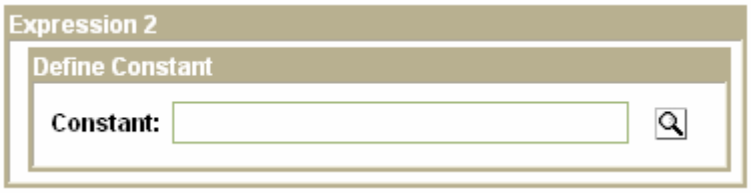
Each Condition Type correlates to a specific Expression 2 Type.

Condition Type	Expression 2 Type
equal to	constant
non equal to	field
greater than	expression
not greater than	expression
less than	prompt
not less than	prompt
like	constant
not like	prompt
is null	
is not null	
in list	list
not in list	subquery
between not between	constant-constant constant-field constant-expression field-constant field-field field-expression expression-constant expression-field expression-expression
exists	subquery
does not exists	subquery
in tree	tree option
not in tree	tree option

Equal To

7. Choose “equal to”.

Then you would choose **Expression 2 Type**
Expression 2 Type is what Expression 1 Type will be compared to:

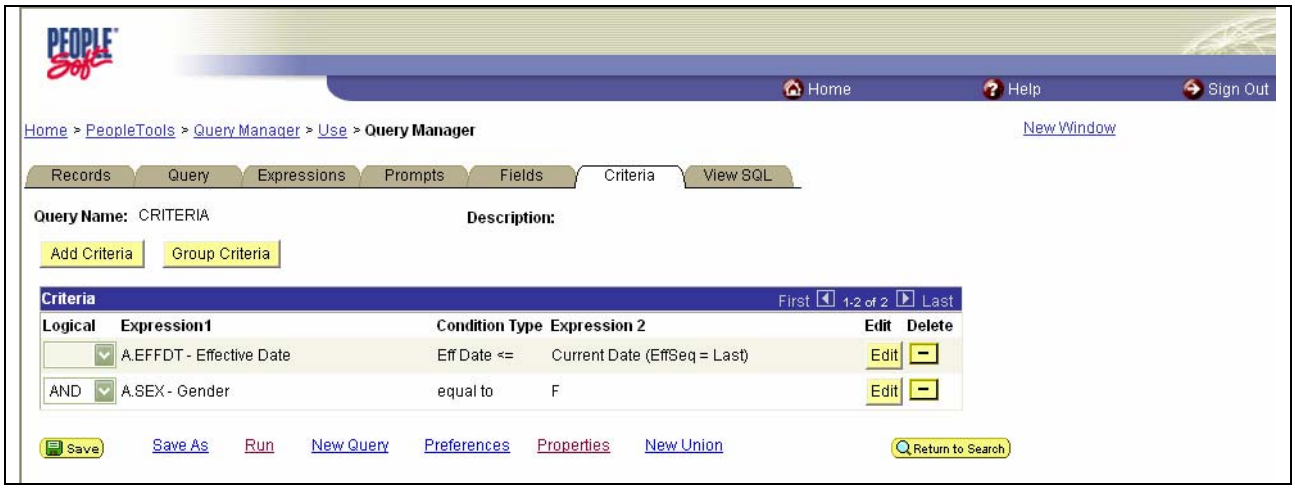
Field	If field was selected as the type: 
Expression	If expression was selected as the type: 
Constant	If constant was selected as the type: (case-sensitive) 
Prompt	If Prompt was selected as the type: 
Subquery	If Subquery was selected as the type: 

8. Choose “Constant”.

9. Click the magnifying glass in order to see a list of valid values for the selected field. Choose “F” by clicking the “Select Constant” hyperlink so that the query will display all female employee rows.

10. Click OK

Your Criteria Tab should now look like this:



Note: You will need to know how the data is stored in the database to ensure accurate results when the query is executed.

12. Click Save
13. Click Run

Like

The *like* condition type retrieves data containing fields that match specific portions of a character string.

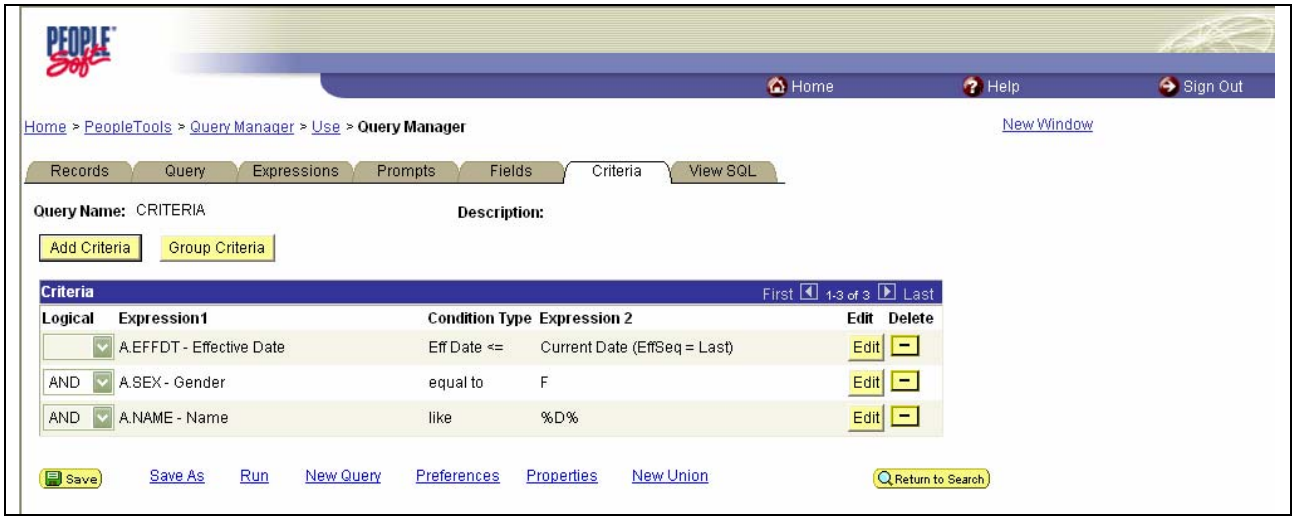
In addition to your current criteria, retrieve employees that have a first name, middle initial or last name that begins with the capitol letter “D”.

1. Go to the Fields Page
2. Click the  button next to the field Name.
3. Condition Type: like
4. Expression 2 Type: Constant
5. Expression 2: Type: %D%

The *like* operator is *case-sensitive* and uses wildcard characters to search for data:

Wildcard Character	Definition
%	Any string of zero or more characters. For example, C% finds any string beginning with the letter C.
_	Any single character. For example, “_ones” will find any string of five characters ending with “ones” such as Jones and Cones.

6. Click OK



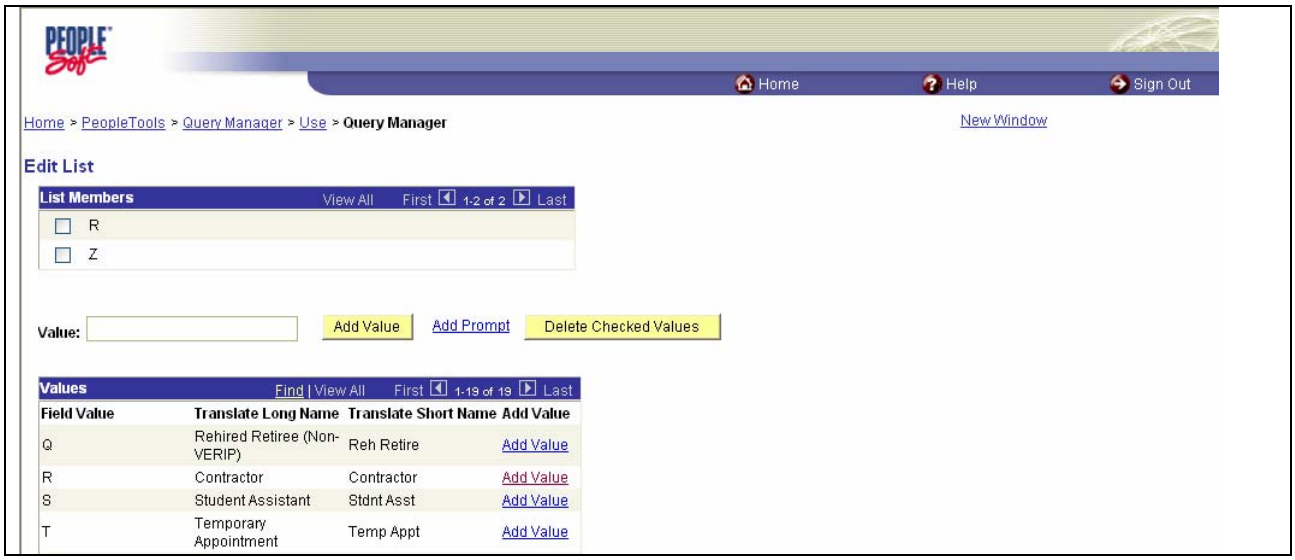
7. Click Save
8. Click Run

In List

The In List operator finds fields having a value that matches any one of the values in a list of values. With this option, you are prompted to create a list with the Edit List dialog box.

Add criteria to this query to find only Guests and Contract workers.

1. Go to the Query Tab to see a list of all fields available in the EMPLOYEES table.
   We have not selected EMPL_CLASS for our output but we can add criteria to that field.
2. Select the funnel button next to the field EMPL_CLASS.
3. Condition Type: in list
4. Expression 2 Type: In List
5. Click the List Members magnifying class to see a list of available values.
6. Select “Z” for Guests and “R” for Contract workers.



6. Click OK
7. Click Save
8. Click Run

Your query should now display all active female Guests and Contract workers whose names contain a capitol “D”.

Is Null

When you use Is Null, you are searching for fields having no value. Null fields are not the same as zeros or blanks. Null fields have no data, whereas zeros and blanks are considered data.

Boolean Expressions

Boolean expressions are AND, AND NOT, NOT, OR, OR NOT, and parentheses. They are used to further define your criteria rows. Boolean expressions are placed in the Logical column of the criteria tab.

“AND” is the default Boolean expression and is added each time you add a new criteria expression.

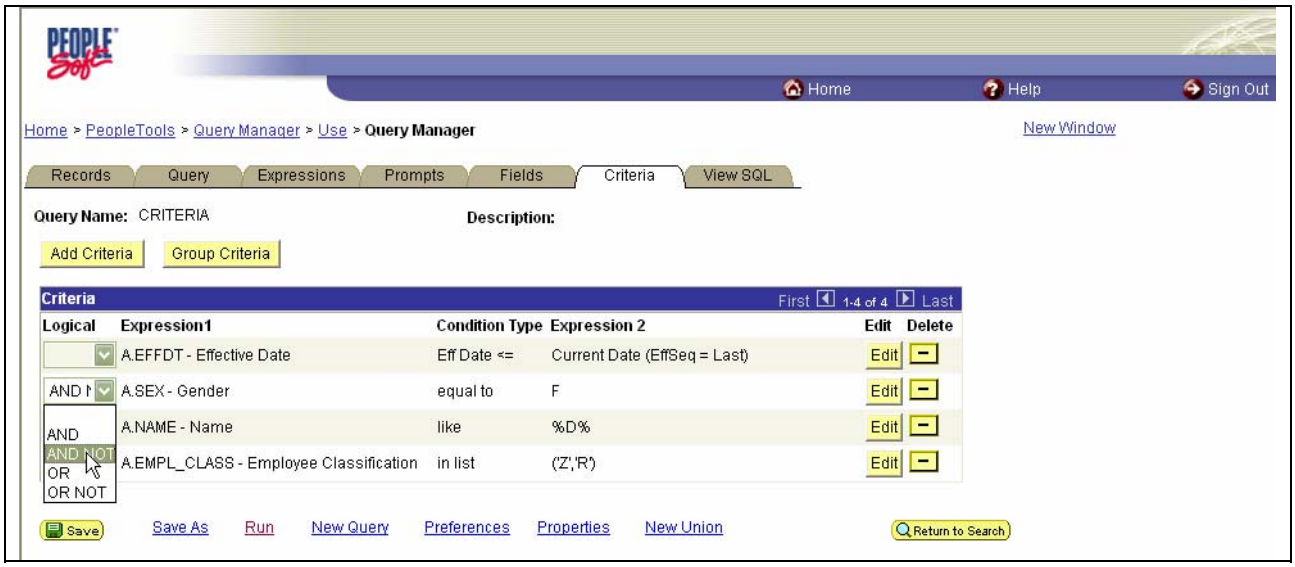
Use the pull-down menu in the Logical column for the row you want to change to toggle to a different expression.

Note:

- Using AND limits and usually reduces your found set of data rows.
- Using OR usually expands the found set of data rows that meet your criteria.

On the Criteria Tab you can select the Boolean expression to the left of each criteria.

1. Choose “AND NOT” in front of the criteria row selecting only *females*.



2. Click Save
3. Click Run to see the results of your change in criteria.

Order of Execution

Query processes criteria in a certain order based on what Boolean expressions are being used. Query will first execute criteria enclosed in parenthesis, then AND NOT criteria, followed by AND criteria, and finally OR criteria.

When you have more than one criteria row, you can use parentheses to control the order in which Query executes them. To do this, select the Group Criteria button. You can then add parenthesis to the appropriate criteria rows.

Effective Date

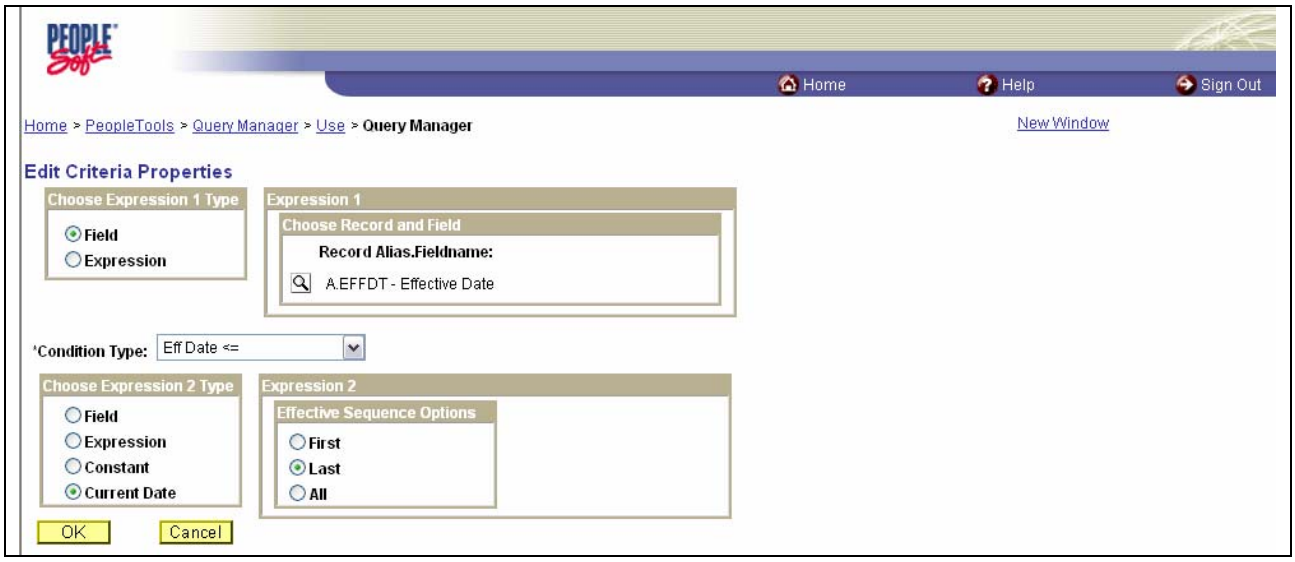
Effective-dated records are those records that contain the field EFFDT. The effective date field is used throughout PeopleSoft applications to give data a historical perspective and allows for the viewing of data changes over time. EFFDT enables rows of data to be classified in one of three categories:

History	Rows of data where the effective date is less than the effective date of the current row.
Current	The row of data with the highest effective date/sequence number less than or equal to today's date (system date on the Server). There can only be one current row per high-level key.
Future	Rows of data where the effective date is greater than today's date (system date on the Server).

Effective dates are used in a query as criteria. When you start a new query and select an effective-dated record, a dialog will display informing you that an effective-dated criteria row has been created.

The automatic default effective date criteria that is included in your query will select the most recent row of data by having Effective Date <= Current Date.

If you want to edit this criteria row, you can click on the edit button next to the EFFDT criteria row on the Criteria tab. The edit screen looks like this:



If you select one of the four effective-date comparisons, you will be returning one effective-dated row of information per item, and you must choose with what you want the effective date compared.

Effective Date <= Effective Date <	Maximum Effdt {<=,<} {current date, constant, field}.
Effective Date >= Effective Date >	Minimum Effdt {>=,>} {current date, constant, field}.

Or, you may choose to select an alternative option:

First Effective Date	Returns the row that contains the lowest (oldest) effective date value.
Last Effective Date	Returns the row that contains the highest effective date value.
No Effective Date	Does not use any effective date logic, therefore returns all rows of effective-dated information.

Note: Effective-date tables often have an effective status field. The Eff_Status field has two values, active “A” and inactive “I”. If you are working with effective-dated tables and looking for the current row of information, you may also want to add criteria on the Eff_Status field to specify only active rows.

Chapter Key Points

- Criteria are specified in the Criteria tab. Properties of criteria are Expression 1, Condition, Expression 2, and Logical.
- Condition Types allow you compare fields and find values that are greater or less than the field, values that are null, and values like other values.
- Criteria rows can take advantage of effective-dated logic.

ACTIVITY 1

Create a Query showing the last actions for all active Student Assistants. Be sure to format you results as you would like them to display. Save the query as STUDENT_ACTIONS.

Hints: Use the JOB table, leave the automatically created effective dated criteria row which will return the most current row, choose EMPL_STATUS in list “A,L,P,S” in order to select active students, and add a criteria to select EMPL_CLASS “S” for Student Assistant.

ACTIVITY 2

Create a Query showing all the all actions in the Life Sciences Division between 1/1/2001 and 1/1/2002. Save the query as LS_ACTIONS_BTW_DATES.

Hints: Use the JOB table, add criteria to find employees in the LS division, and add effective dated criteria using the Condition Type “between” and include your two dates.

ACTIVITY 3

Create a Query showing all the LBNL employee HIRE and TERMINATION actions in the Engineering Division on or after July 1, 2000. Save the query as EG_HIRES_TERMS.

Hints: Use the JOB table, add criteria to exclude Contractor workers (R) and Guests (Z), add criteria to find employees in the EG division, use an *inlist* criteria for actions HIR & TER, and be sure your effective date includes or exceeds 7/1/2000 without limiting your results to the most recent row.

RUNTIME PROMPTING

Overview

You will learn how to set up runtime prompts. A runtime prompt allows users to enter a value for a specific field at the time the query is executed. You will see how the value is then used as criteria for retrieving information.

Objectives

Create Runtime prompts

Runtime Prompts

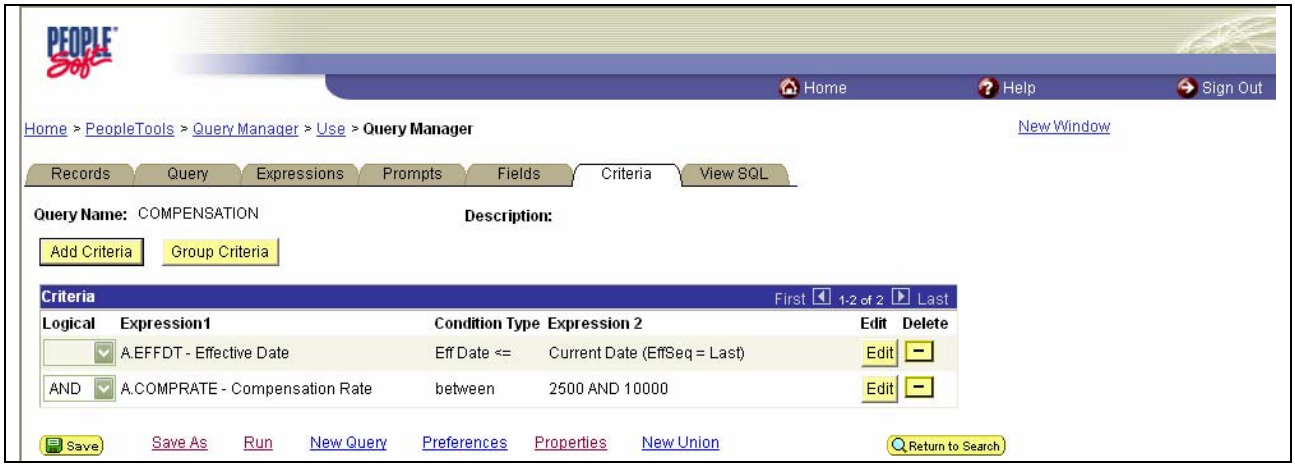
A runtime prompt requires the user to enter a value for a specific field at the time the query is executed. The report will display only those rows of information that match the value entered at the prompt. Prompts make reports more flexible.

Using our previously created query, UNIONCODE2, we will add a prompt in order to select only those employees in the HR department.

Note: Creating a prompt by division (Level 1) requires multiple prompts. The query tool requires the definition of SETID as a prompt in order for the higher level DEPTID prompt to function. You will need to include a prompt for both the SETID and DEPTID fields.

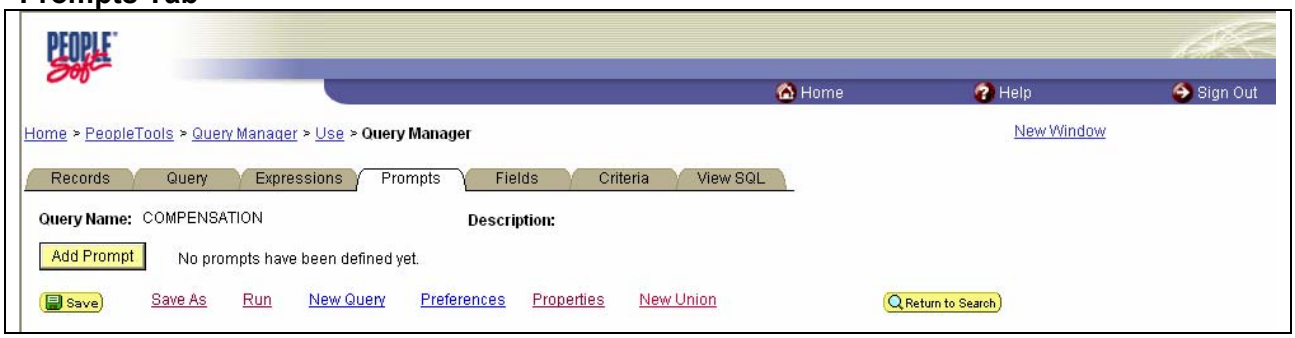
A prompt is simply a row of criteria and can be added from two locations:

Criteria Tab



The criteria tab is the most common method of adding a prompt and is especially useful when adding one Runtime prompt to a query.

Prompts Tab

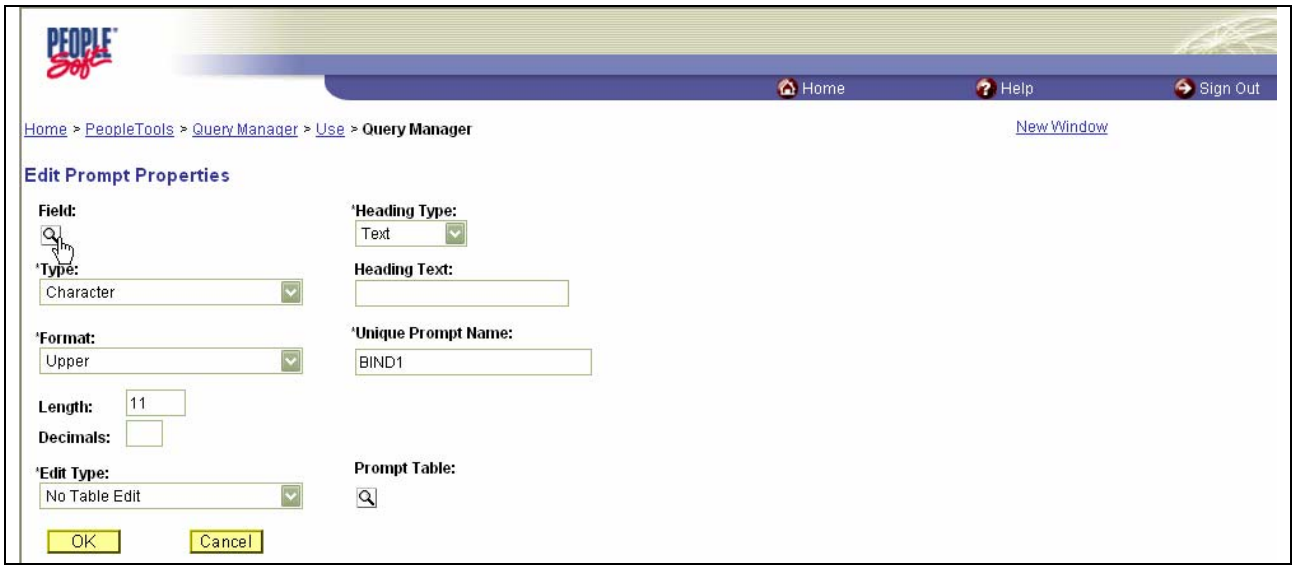


The Prompt tab is used to add Runtime prompts and display a list of all prompts that have been added to this query.

1. Open the UNIONCODES2 query.

2. Add the first Runtime prompt to the SETID field.

   - Navigate to the Prompts tab
   - Click the “Add Prompt” button.



   - Search for and select Field: SETID from the lookup
   - Heading Type: text
   - Heading Text: “Enter the SetID” (This is what your user will see in the Prompt)

The *Edit Prompt Properties* page allows you to verify the parameters for the Runtime prompt.

Heading Types:

Rft long	The long field name from the records definition.
Rft short	The short filed name from the records definition.
Text	Anything you want – you make up the label.

Edit Types:

No Table Edit	Value entered in prompt dialog box is not validated.
Prompt Table	Will be picked as the default if one is defined on the records definition. Allows validation against the prompt table, which enables F4 capabilities.
Translate Table	Will be picked if the field is validated against the Translate Table.
Yes/No	Standard validation for fields represented by check boxes on panels.

If the edit type is Prompt Table, make sure the Prompt Table field is the correct table you want the user to prompt against.

Type, format, and length all default from the field definition in the database.

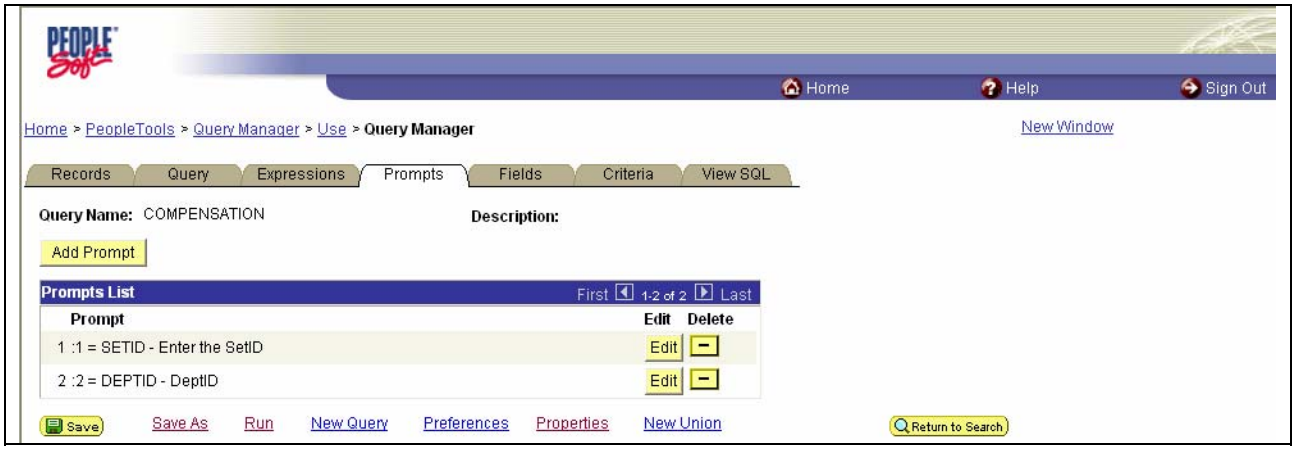
Unique Prompt Name is used in translations. The system assigned this as a way to ensure that each prompt is unique. There is no need to change this field name.

3. Add the second Runtime prompt to the DEPTID field.

   - Navigate to the Prompts tab
   - Click the “Add Prompt” button.
   - Search for and select Field: DEPTID from the lookup
   - Heading Type: text
   - Heading Text: “Enter the DeptID” (This is what your user will see in the Prompt)

4. Click OK

Your Prompts Tab should now look like this:

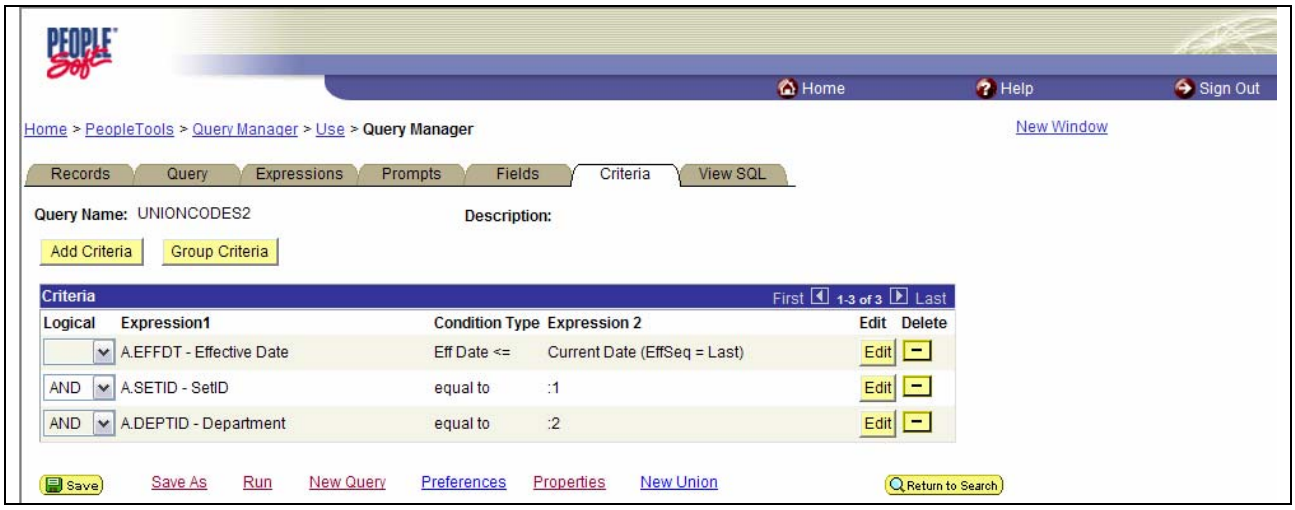


The “:” before the 1 and two represent the *Unique Prompt Names* BIND1 and BIND2.

Now the Prompts you have created must be added to the Criteria Tab.

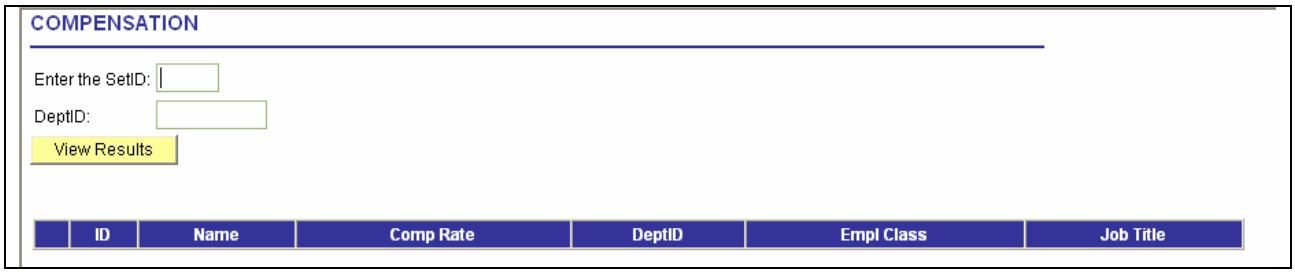
5. Navigate to your Criteria Tab and click the “Add Criteria” button.
6. Select the Field SETID for Expression1
7. Leave default of Equal To
8. Select Prompt for the Expression2 Type
9. Use the lookup to select the SETID prompt you just created from the list of available prompts for this query.
10. Repeat the same steps to add your prompt for DEPTID.

Your Criteria Tab should now look like this:



Your prompts are represented on the criteria panel as bind variables.

11. Click OK
12. Click Save
13. Click Run



Notice the “prompt” is located directly below the query name and the View Results button has been added.

13. Enter the SETID - use lookup (LBL01)
14. Enter a DEPTID – use lookup
15. Click *View Results*

This query has become dynamic based on the DeptID chosen for each run.

Prompt Summary

Creating Prompts

Prompts Tab	Useful when adding multiple prompts to one query.
Criteria Tab	Useful when adding one prompt to a query for a specific field.

Editing Prompts

Once a prompt has been created, you can view them via one of the methods above.

Prompts Tab	Click Edit button for the prompt you wish to edit.
Criteria Tab	Click Edit and then the Edit Prompt hyperlink to edit the prompt.

Deleting Prompts

To delete a prompt, access the Prompts page and click the delete button (minus sign) for the prompt you wish to delete. If you are using the prompt in a row of criteria, you need to remove it from the criteria before deleting it.

Chapter Key Points

- Runtime prompts are created so users can further define the criteria associated with a query is executed.
- With prompt queries, many users may execute the same query, but the output data will be different based on the values entered at the prompt.

ACTIVITY 1

1. Modify the EE_LIST to show all current employees whose birthdates fall on a given date range. The person running the query will determine the date range. Save the query as EE_LIST_BIRTHDATE The other requirements are:

*Hint: You will need to create a separate prompt for each date, and our Expression 2 Type must be Expr – Expr because you are selecting criteria based on two different prompts.

- Display the fields: EMPLID, NAME, SEX, BIRTHDATE
- Order the output by BIRTHDATE and then NAME
- Save the query as BIRTHDATE.

WORKING WITH MULTIPLE TABLES

Overview

You will learn how to create a query based on multiple tables. In many cases, the desired output data comes from at least two different tables. In these cases you must link the tables together to retrieve the correct output.

Objectives

- Describe the processes involved with creating a query from multiple tables.
- Join multiple tables in a single query.

Queries with Multiple Tables

When writing queries, it is very simple to retrieve information from one table. In many cases, you want to retrieve data from more than one table or specify criteria in your query from a second table. In these cases, you need to link at least two tables in one query.

Tables and Views

A record listed in your Records Search may represent either a table or a view. A table physically stores specific data. A view is a logical representation of data and may consist of data from multiple tables depending on how the record was defined by the programmers. Additionally, views may already have criteria associated with them. Therefore, it may be easier to create a query from a view rather than a table.

If an appropriate view of the required tables is not provided and you require data from multiple tables, you must know on which tables the data required are stored, and how to join the tables. You may also send a request for a query to hris@lbl.gov.

Joins

A join enables you to retrieve data from two or more records or specify criteria from more than one record. Whenever you perform a join, the records involved are linked based on common fields.

In Query, predefined joins can be generated as a Hierarchical join or a Related Record join. Since these types of joins are predefined, you do not have to add any criteria to link the records.

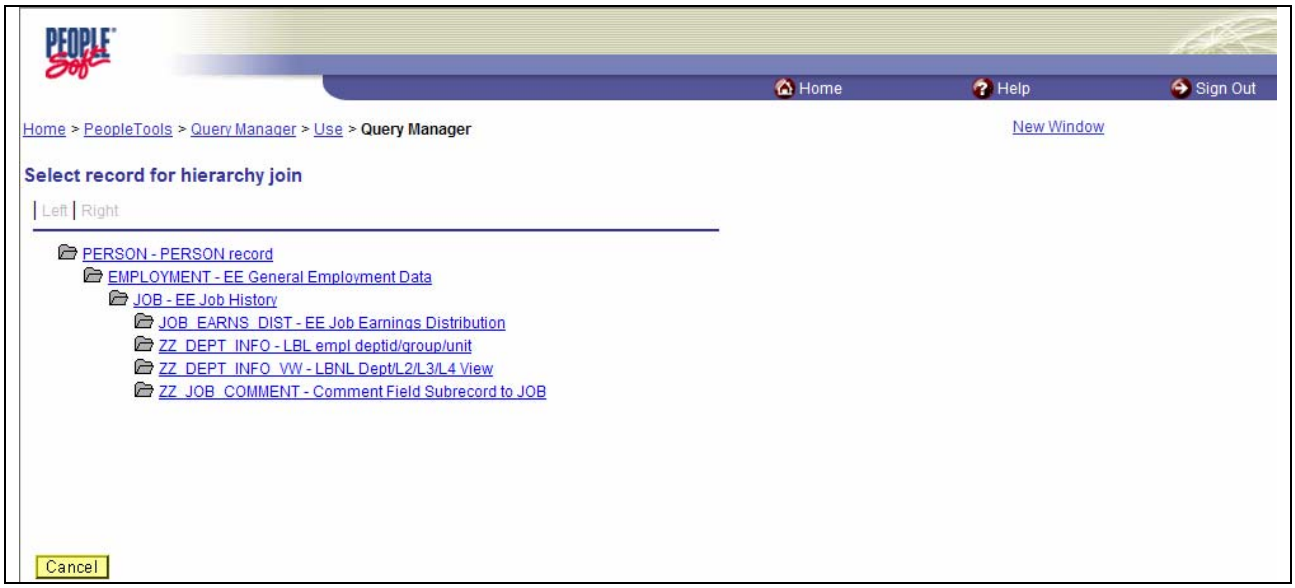
Record Hierarchy	A Hierarchical join uses records that are parents or children of each other.
Related Record	Related Record joins use records from non-hierarchical records that are related by common fields. For example, description tables for common codes are related records.

Note: In addition to the predefined joins, there are many other ways to link records which require in-depth knowledge of SQL.

1. Create a new query that uses fields from the JOB record:
   - Record: JOB
   - Fields in this column order: EMPLID, DEPTID, JOBCODE, EFFDT, EFFSEQ, ACTION, ACTION REASON
   - Sort by EMPLID
   - Create a Criteria for DEPTID equal to: HR
   - Save query as: LAST_ACTION_W_JOBTITLES

Record Hierarchy Join

2. To join records that share a common high-level key, simply select the Hierarchy Join hyperlink in the Query tab page.



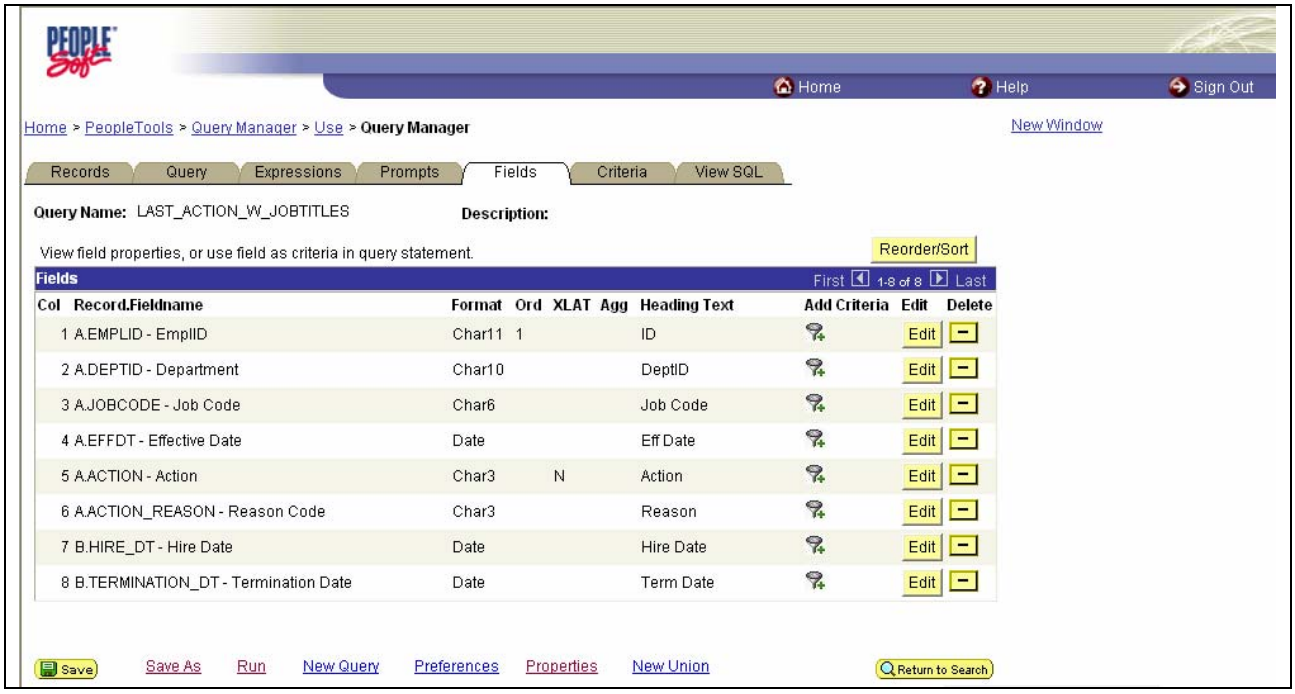
A new page will appear allowing you to select the record to be joined to your existing query.

3. Click the EMPLOYMENT record.

Your newly joined record and its fields are displayed below the first records. Notice that each record added to your query is assigned an incremental letter that represents a correlation, or alias, of the record.

The second record denotes that it was joined with the first record. In this example, EMPLOYMENT (B) was joined with JOB (A).

4. Select Fields from the “B” table: HIRE_DT and TERMINATION_DT.
5. Click the Fields tab



6. Click Save
7. Click Run

Notice that we now have Hire and Termination dates from the B (EMPLOYMENT) table.

Related Record Join

Make this query more informative by joining JOB to the JOBCODE_TBL so that we can see descriptions for the JOBCODES. These will be our Job Titles.

The related records are specific to a field in the current record. If a field has a related record, you will see the record displayed as a hyperlink next to the field.

8. From the JOB record
9. Click Join JOBCODE_TBL – Job Codes hyperlink.

Your newly joined record appears below the others and has been given the alias of “C”.

10. Add the DESCR field to the existing query.
11. Click the Fields tab
13. Move the DESCR field from the C table to just after the JOBCODE field.
14. Edit Heading text so that it says “Job Title”
15. Click Save
16. Click Run

Note: Planning out a report is helpful: Where are the fields that you want to select? What records are involved? Which record is the focus of your report? How do the records relate?

Chapter Key Points

- Queries often access information from more than one table. You can access multiple tables via Hierarchical or Related Record joins.
- Rather than have the user create a complex query from multiple tables, a view can be created by developers with the join embedded in the view. The user will then only have to access one record, a view.
- Hierarchical records are set up in the Application Designer in the Parent Record field. Related records are set up in the Application Designer in the Prompt Table field. For Hierarchical and Related Record joins, multiple tables are automatically linked together.

ACTIVITY 1

To further improve our query LAST_ACTION_W_JOBTITLES, join to the related record ACTION REASON table in order to see the descriptions of the ACTION row. Be sure to change the column order of your fields as well as the Heading Text for the ACTION_REASON field. (You could also make this query dynamic by adding a prompt for DEPTID!)

ACTIVITY CHALLENGE

If you wanted to include the employee name in the results of your query, you would need to do what is called an “outer join” to PERSONAL_DATA. Since this record is not available as a hierarchal or related record join, you would need to select this record from the Records tab. You will be prompted to select which table you want to join to the PERSONAL_DATA table. Since JOB is where EMPLID is located and this is also a key field in the PERSONAL_DATA table, this is probably the table you want to join to. You will be given an Auto Join Criteria pop-up window displaying all of the key fields found in both tables. Click Add Criteria and select NAME from the E table.

PREDEFINED CALCULATIONS

Overview

You will learn how to use aggregate functions in a query. Instead of returning many rows of data, you may only be interested in a count of rows or a sum of a numeric field. You can produce these results by using Query.

Objectives

Use predefined aggregate functions in a query.

Aggregate Functions

An aggregate is a predefined summary calculation in Query. An aggregate function returns a singe value for multiple rows of output. The aggregate functions available are:

Sum, Count, Min, Max, Average

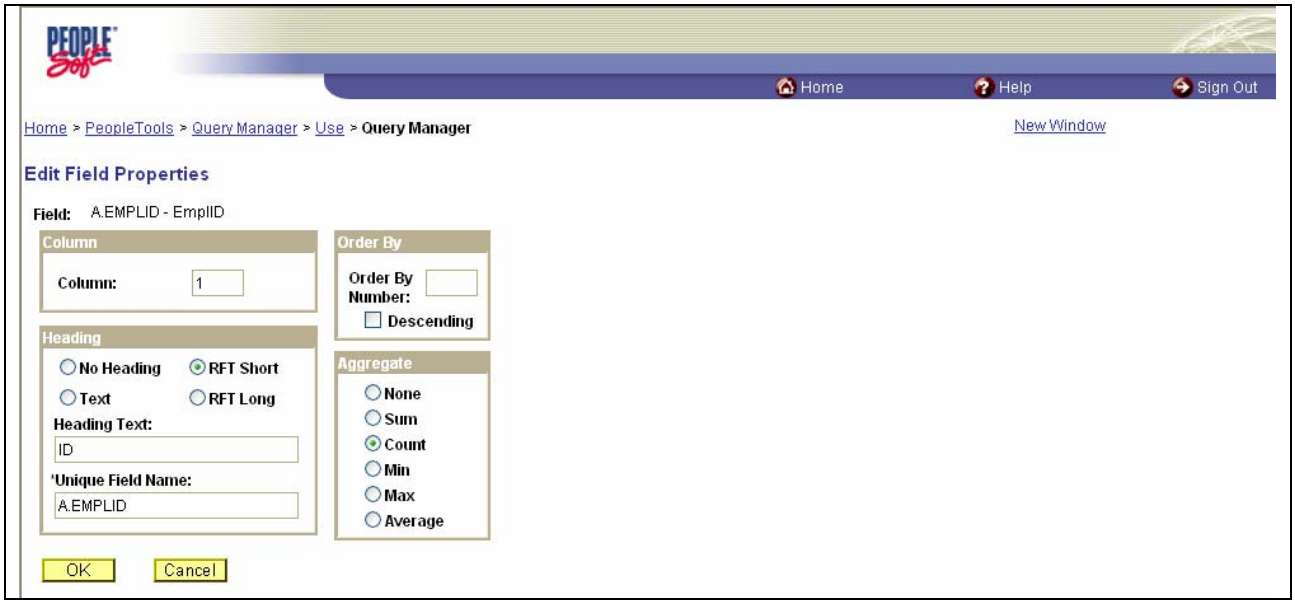
1. Build a query so we can count the number of employees in the EMPLOYEES record.

    - Record: EMPLOYEES
    - Fields: EMPLID
    - Query Name: EMPLNUM

2. Save

Use aggregate function to count the number of employees.

3. Click the Fields tab
4. Click Edit button next to EMPL field
5. Aggregate: Count



6. Click OK
7. Click Save
8. Click Run

The output will display the aggregate function Count, and not the individual EMPLID numbers. The field in now redefined within the query. Whenever EMPLID is used, it's the count that is really used.

Remember that aggregate functions return a single value based on multiple rows of data. If the field with the aggregate function is the only field selected to be displayed in the output, Query will look at all the rows of data and perform the function based on every row. The output will be a single value.

Chapter Key Points

- You can return a summarized value in Query using the aggregate function option.

ACTIVITY 1
If you wanted to see the total compensation for per department you would need to add the Aggregate function of SUM to the COMPRATE field and show these by DEPTID.

Record: EMPLOYEES
Fields: COMPRATE and DEPTID
Criteria: SETID = LBL01
Aggregate: Sum on COMPRATE field

Note: For a complete list of Access Keys used in PeopleSoft, use the hotkey Ctrl+K while you are in an active HRIS window.

OUTPUT TO EXCEL

Throughout this class you've been running all of your query results to the grid control. You have the option of downloading the query to excel.

From the grid control window, select either the Excel SpreadSheet or CSV Text File hyperlink to download your results.

Note: At this time, we are suggesting that you use the CSV Text File download and format your results in Excel.

Tips on formatting your Query Output

1) When you first open the CSV file, always format the spreadsheet and save.

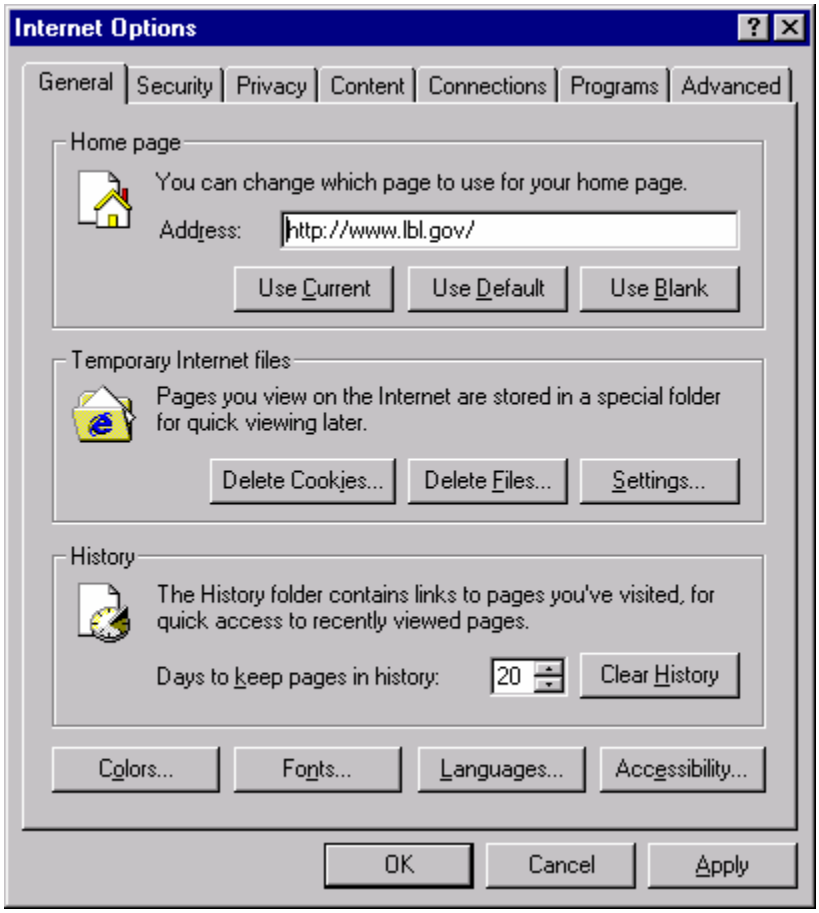
    a) Select all cells in the spreadsheet using the top left cell. Hot Key: Ctrl-A
    b) AutoFit the column width – Format, Column, AutoFit Selection. Hot Key: Alt-O,C,A
    c) Left Justify all columns – click the Align Left tool bar button
    d) Change the .CSV format of the spreadsheet - Save your CSV file, edit the "Save as type" to be Excel Workbook, Click OK.

2) Use Excel's Format/Cells menu option to standardize fields by column. Fields that we suggest formatting are: Numbers (including EMPLID), Dates, and Time. You may also wish to write a MACRO in order to quickly format those queries you run most often.

Deleting Cookies and Cache Files in Internet Explorer

For assistance contact the LBNL Help Desk at HLP@lbl.gov

1. From Internet Explorer **Tools** Menu, Select **Internet** Options and be sure you are on the **General tab.**



2. Click the **Delete Cookies** button, all “cookie” files will be deleted.

3. Click on the **Delete Files** button.

4. Check the “Delete all offline content” box and click OK, all IE cache files will be deleted.